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NEWSLETTER – JULY 2003

JOINT MEETING with SOUTH COAST GEOLOGICAL SOCIETY

DATE: Tuesday, July 15, 2003
LOCATION: Wyndham Garden Hotel, 3350 Ave. of the Arts, Costa Mesa
TIME: 6:00 pm--Social Hour, 7:00 pm—Dinner, 8:00 pm--Talk
RESERVATIONS: Call Leighton & Associates (949) 250-1421 ex. 570 by noon, Friday, July 11. PLEASE INDICATE YOUR CHOICE OF SALMON or LONDON BROIL when you call in.
COST: \$22 per person with reservations, \$27 at the door, \$12 for students.
SPEAKER: Eldon Gath
TITLE: Uplift of the Puente Hills and Santa Monica Mountains

ABSTRACT: The Santa Ana Mountains (SAM) are a 1.7 km high mountain range that have not yet been provided with an uplift mechanism. The uplift issue is not just geological curiosity, but it could be of extreme importance to the safety of the citizens of Orange and Riverside counties. Recent geomorphic mapping and analysis are providing some constraints on patterns and rates of uplift, and attempting to shed light on the uplift mechanism and seismic hazard implications. This work is using a new method of quantitative analysis from the Puente Hills based on relationships between drainage basin area and age, then applied to the Santiago Creek drainage basin.

In the Puente Hills, the basin age was calculated by measuring the right-lateral strike-slip displacement of each basin's primary stream, and regressing it against the basin's area. Because the Whittier fault's slip rate is known (2.5 mm/yr), the age of the channel can be calculated by retro-deforming it. So, if you calculate the basin area, you can calculate the age of the initiation of the stream forming the drainage basin. The PH also have three fill terraces and three higher erosional surfaces. From this analysis, the Puente Hills have been rising 0.4 mm/yr since their emergence ~1 Ma.

The SAM have three well developed erosional surfaces preserved on them, as well as a suite of four fluvial fill terraces preserved in Santiago Creek, a drainage trapped between the uplifting SAM and a parallel Loma Ridge. By correlation of the terraces with the marine eustatic sea level curve, (similar to the San Joaquin Hills) we were able to estimate a 0.3 mm/yr uplift rate for the SAM and an emergence age of ~3.6 Ma. Santiago Creek formed ~2.4 Ma in conjunction with the initiation of the Loma Ridge structure, a hanging wall structure that formed in response to compressional buckling of sedimentary strata on the flanks of the uplifting Santa Ana block. Hanging wall block faulting appears to have deflected Santiago Creek northerly ~1,200 m along five discrete block margin faults. (cont.)

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Tania Gonzalez
(714) 282-6123
[tgonzalez@earthco
nsultants.com](mailto:tgonzalez@earthco
nsultants.com)

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(818) 707-8320
[mhawley@leightong
eo.com](mailto:mhawley@leightong
eo.com)

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(714) 549-8921
[bvillalobos@petra-
inc.com](mailto:bvillalobos@petra-
inc.com)

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Jeff Kofoed
(818) 889-0844
[jckofoed@hotmail.
com](mailto:jckofoed@hotmail.
com)

(cont.) The termination of the Elsinore fault into the Chino and Whittier faults leaves at least 1-2 mm/yr of north-vergent strain unaccounted for. We speculate that this missing strain is being transferred into uplift of the SAM, with complex interaction among other north-vergent structures in the southern California area. Come, hear, argue.

Biography:

Eldon Gath is the President of Earth Consultants International (ECI), a geological consulting firm formed in 1997. Eldon has nearly 25 years of professional consulting experience with southern California firms Pacific Soils Engineering and Leighton and Associates before forming ECI. He received his BS in Geology from the University of Minnesota in 1978, and has been in and out of all southern California graduate schools ever since. Eldon is a past president of the South Coast Geological Society, a past national president of the Association of Engineering Geologists, and is currently serving on the National Research Council committee to develop a research agenda for the National Earthquake Engineering Simulation program. This talk is based on research for his PhD at UCI, led by Dr. Lisa Grant of the Dept. of Environmental Analysis and Design, and admirably assisted by Eric Runnerstrom.

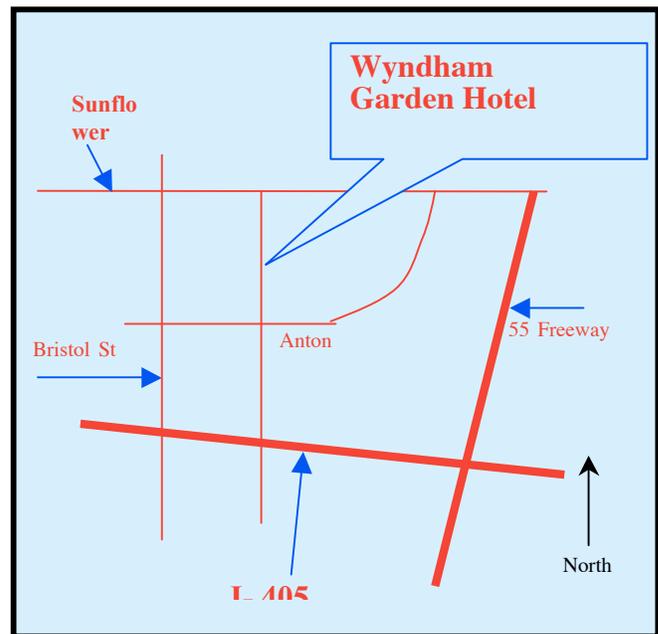
CHAIR'S COLUMN

By Tania Gonzalez

Summer has finally arrived in southern California, just in time for the Fourth of July backyard celebrations! I wish you all the best for the summer months. This is the time to relax before you finalize your talk for the Annual AEG meeting in Vail, Colorado, this coming September. You are not giving a talk?! Well, no matter, come to the meeting and listen to others' talks, learn what is new in our profession, touch bases with old friends, and make new acquaintances. For more information on the Annual Meeting, visit www.aegweb.org.

Last month's meeting was a resounding success. We joined forces with the Coast Geological Society in Ventura, who were our hosts for a great evening, replete with barbecued tri-tip and draft beer. A record-breaking 189 people came to listen to Dr. Kerry Sieh, our invited guest speaker, who talked about the 2002 Denali, Alaska Earthquake. Kerry has been traveling extensively lately, but he was very gracious to take the time to give this presentation. Thank you Kerry! He took us on a tour of the three faults that ruptured during the Mw7.9 event, showing the amount of displacement that occurred along different sections of the faults. The Denali fault and associated faults to the northwest and southeast could be an analogue to some of the faults in our own backyard. Could the northern segment of the San Jacinto fault and the Cucamonga fault rupture together? The Denali event suggests that this is a plausible scenario.

This month's meeting will be hosted by the South Coast Geological Society at their usual location in Costa Mesa. Speaker Eldon Gath will be talking about uplift of the Puente



The meeting will be held at the **Wyndham Garden Hotel, 3350 Ave of the Arts, Costa Mesa (714) 751-5100, T.G. 859 D-3.**

Hills and Santa Ana Mountains. Eldon had been scheduled to give this talk to South Coast earlier this year, but at the last minute had a conflict and arranged for Tom Rockwell to give another talk instead. Several people were looking forward to hear Eldon's talk on the Santa Ana Mountains, so this is their chance, and yours also. Hope to see you there!

AEG headquarters have moved to a new office in Denver, Colorado, three blocks away from the old office at NEHA. Their new address is 300 S. Jackson Street, Suite 100, Denver, CO 80209. For mailing purposes, however, they prefer you use their P.O. Box address, as follows: P.O. Box 460518, Denver, Colorado 80246.

Mr. Sandy Figuers, an AEG member from the Northern California Section, has been putting together a list of field trip guidebooks covering California geology. He has amassed an impressive list of over 800 guides, some dating to the early 1900s. He is looking for the reference to any pre-1980 California geology guidebook, especially any obscure, miscellaneous guide prepared by national, state or local organizations, and museums, universities or colleges. He is hoping to finish this list of references by the end of the summer, when he will make it available for a small fee through the California Sections of AEG. You can help him by e-mailing to him the references to any obscure field trip guidebooks that you know. His e-mail address is figuers@aol.com.

2003 MEMBERSHIP RENEWAL

You should have received your 2003 dues statement from AEG National by now. If you have not received it, or are

unsure about your membership status, please contact AEG Headquarters aegweb.org, or Tania Gonzalez. We are currently looking for a new Membership Chair. Please contact Tania Gonzalez if you wish to volunteer.

our newsletter throughout the year and can post their logo or business card in the newsletter if so desired. Please mail contributions made out to AEG to our section chair, Tania Gonzalez.

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NATIONAL NEWS

The American Geological Institute (AGI) Government Affairs Monthly Review included the following news bites. For additional information and prior updates refer to the AGI web site under "Government Affairs" www.agiweb.org

On June 26th, Smith and Rep. Brian Baird (D-WA) introduced H.R. 2608, legislation to reauthorize the **National Earthquake Hazards Reduction Program** (NEHRP) for the next five years. Probably the most significant change in this draft bill from previous authorizations is the removal of the Federal Emergency Management Agency (FEMA; now part of the Department of Homeland Security) as lead agency to be replaced by the National Institute of Standards and Technology (NIST), which would chair an Interagency Coordinating Committee on Earthquake Hazard Reduction. The bill authorizes funds for the program, including \$36 million per year for the USGS's Advanced National Seismic System (ANSS) initiative. The bill also would establish an Advisory Committee for NEHRP that would include non-federal members. The bill emphasizes the need for better reporting and accountability for the program, including not only a strategic plan requirement but also regular assessments by the advisory committee on the program's effectiveness. Smith has pledged to work with the earthquake research community to revise the bill in preparation for a committee vote in late July. More at www.agiweb.org/gap/legis108/nehpr.html

During June, the House took aim at trying to mitigate the volatility in the natural gas market. On June 10th, the **House Committee on Energy and Commerce** heard testimony about the many different approaches the US could take to alleviate market volatility: increase the amount of pipelines to transport the gas to the needed market areas, lift the moratorium from federal lands to increase drilling production, reduce demand as well as explore clean coal technology, liquefied natural gas (LNG), methane hydrate, and tight-sand gas. The most surprising comment was made by Federal Reserve Board Chairman Alan Greenspan who stated that the US needs to increase LNG imports. Greenspan's presence at the hearing reflected the impact of natural gas prices on the economy.

In response to Greenspan's comments, the House Resources Subcommittee on Energy and Mineral Resources held a June 19th hearing to debate expanding domestic gas production or increasing LNG imports. Proponents for increasing domestic drilling said that the US needs to lift some of the restrictions on federal land leasing because they contain a great amount of gas resources. On the LNG front, the witnesses were split on what effects it would have on the market. Some felt LNG would not be a good investment because large capital costs mean that it is only profitable when gas prices are high, and it would increase the US's foreign energy dependence. Other witnesses testified that LNG could be profitable at moderate gas prices.

On June 24th, the subcommittee held a second hearing to discuss two recent studies -- the Department of the Interior's Energy Policy and Conservation Act-mandated inventory and a **RAND economic assessment of the Green River Basin** -- that evaluated the amount of oil and gas resources available on federal lands in the west. Both studies show that the majority of the resources on federal lands are available for leasing, but some of the witnesses testified that the leasing process is very problematic and slow. Assistant Secretary of the Interior for Land and Minerals Management Rebecca Watson testified that the process is very complex, and litigation has played a major role in delaying the process. Watson also said that administratively DOI is addressing the problem and trying to increase their efficiency. More at www.agiweb.org/gap/legis108/energy_hearings.html.

On June 4th, the Senate Judiciary Committee held a hearing to examine S. 1125, the **Fairness in Asbestos Injury Resolution bill** introduced by committee chairman Orrin Hatch (R-UT). S. 1125 aims to "create a privately funded, publicly administered fund to provide the necessary resources for an asbestos injury claims resolution program." The bill initially established a United States

Court of Asbestos Claims to deal exclusively with asbestos litigation separate from the judicial system, but this provision was later removed in the bill's June 24 mark-up. Another highly contentious provision of the bill would have deducted money already received by the claimant through collateral sources such as Medicaid and insurance from the award granted by the court, but an amendment agreed to by Hatch and ranking member Sen. Patrick Leahy (D-VT) negated most collateral source deductions. Amendments made to the bill on June 24th also adjust award values for inflation, double the statute of limitations, eliminate the 1982 exposure cutoff date, and ask the Institute of Medicine to investigate the link between asbestos exposure and cancer. Hatch and Leahy also agreed to "a responsible ban of asbestos related products" currently in use. On June 26th the committee adopted amendments that increased the fund to \$108 billion and added provisions for a contingency plan in case the fund amount is insufficient. Hatch postponed a vote on the bill until July 10th. Additional hearing information is available at www.agiweb.org/gap/legis108/asbestos_hearings.html

Federal authority to regulate the **nation's waters** faced several challenges in June. Although a federal appeals court reaffirmed **Clean Water Act** (CWA) jurisdiction over isolated wetlands, other lawsuits were filed asserting that the EPA's interpretation of "navigable" waters under its regulatory authority is overly broad, and claiming that tributaries of navigable waters should not be protected by CWA provisions. A hearing of the House Transportation and Infrastructure Subcommittee on Water Resources and Environment focused on the ability of states to reclassify inappropriately designated water bodies, including requests to lower CWA standards for storm waterways and to allow arid western states greater flexibility to establish water quality criteria and standards. **The Safe Drinking Water Act** (SDWA) and its power to regulate arsenic levels survived a lawsuit contesting the constitutionality of federal reach over contamination not explicitly affecting interstate commerce. The federal appeals court ruled based on procedural issues, however, leaving open the possibility that intrastate water systems could be excluded from SDWA protections in the future. More at www.agiweb.org/gap/issues/index.html#environment

EMPLOYMENT OPPORTUNITIES

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Levine Fricke is seeking Project Engineers/Scientists with the ability to handle multiple projects and effectively manage staff. One position involves strong technical and communication skills. Will conduct and manage Phase 1 ESA's and be part of LFR's Due Diligence group. Bachelors in Environmental Science, Geography, Engineering (Electrical, Mechanical, Civil) or Geosciences required. 5+ years experience in related field desired.

Second position is for the Lead/Asbestos/IAQ group. Successful candidate will conduct and manage inspections, abatement monitoring, write and review reports. 3+ years industry experience required. CAC/DHS certification required. Bachelors in Environmental Science desired.

LFR Levine-Fricke is a growing company and has been selected by ENR Magazine as a Top 100 Environmental Consulting firm. Please e-mail resumes to: hr.emv@lfr.com. Principals only please.

CDM

CDM a global leader in consulting, engineering, construction and operations has the following immediate opening for an Engineering Geologist in its Irvine, CA office. The successful candidate will conduct geologic field investigations on a wide range of public and private projects involving seismic evaluations, landslides, and subsurface soil, rock and water conditions for dams, buildings, water and waste water treatment facilities, transportation projects and remedial actions. The candidate will perform and supervise geotechnical and geo-environmental analysis, design, and construction engineering services. They will provide project management for geotechnical and geo-environmental projects including the preparation of scope, schedules and budgets. The successful candidate will contribute to business development and proposal efforts and prepare technical reports. Minimum of five years' experience in geotechnical and/or geo-environmental engineering required. BA in Engineering Geology or related discipline required; MA in Engineering Geology preferred. CA Certified Engineering geologist and OSHA 40-hour HAZWOPER required. Qualified candidates please send your resume and cover letter to:

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Baldwin, J.E. and Sitar, N., 1991, Loma Prieta Earthquake: engineering geologic perspectives. AEG Special Publication No. 1, 170p	\$10.00		
Bishop, K, and Tandy, 1995, Ground Failure during the January 17, 1994 Northridge earthquake: Association of Engineering Geologists, Southern California Section, Annual Field Trip Guidebook, November 11, 1995, 106p.	\$20.00		
Briggs, R.P. and Parke, C.D., 1990, Guide to Field Trips in Pennsylvania, Ohio, and West Virginia. AEG 33 rd Annual Meeting, October 1-5	\$15.00		
Highway and Railroad Slope Maintenance: AEG, 34 th annual meeting, September 29 th – October 4 th , 1991	\$10.00		
Leighton, F.B. Mitigation of geotechnical litigation in California: Munson Book Associates, Huntington Beach, California, 274p.	\$20.00		
Sieh, K.E., and Matti, J.C., 1992, Earthquake geology, San Andreas fault system, Palm Springs to Palmdale: AEG, 35 th Annual Meeting, Field Trip Guidebook, October 3-4, 1992	\$10.00		
Stout, M.L., ed., 1992, Proceedings of the 35th annual meeting, Association of Engineering Geologists, October 2-9, 1992: 740p.	\$5.00		
Tepel, R, 1995, Professional Licensure for Geologists, an Exploration of Issues, Association of Engineering Geologists Special Publication No. 7, 1995	\$12.00		
Cann, L.R., Cobarrubias, Hollingsworth, B., 1992, Engineering Geology Field Trips Orange County, Santa Monica Mountains, and Malibu: AEG 35 th Annual Meeting, Field Trip Guidebook, October 2-9, 1992	\$10.00		
Los Angeles Metro Rail System Field Trip Guidebook, Association of Engineering Geologists, 35 th Annual Meeting October 2-9, 1992 Long Beach, California	\$10.00		

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