

# ASSOCIATION OF ENGINEERING GEOLOGISTS

SOUTHERN CALIFORNIA SECTION

"Serving Professionals in Engineering, Environmental and Ground-Water Geology Since 1957"

SEPTEMBER 1996

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## THIS MONTH'S MEETING

Monday, September 9, 1996

Joint Meeting with South Coast Geological Society

### Evidence in the Sedimentary Record for Widespread Climatic Changes

*presented by*

**Richard Behl**

Reservations must be made by noon, Friday, September 6!  
Call Dames & Moore at (714) 433-2000

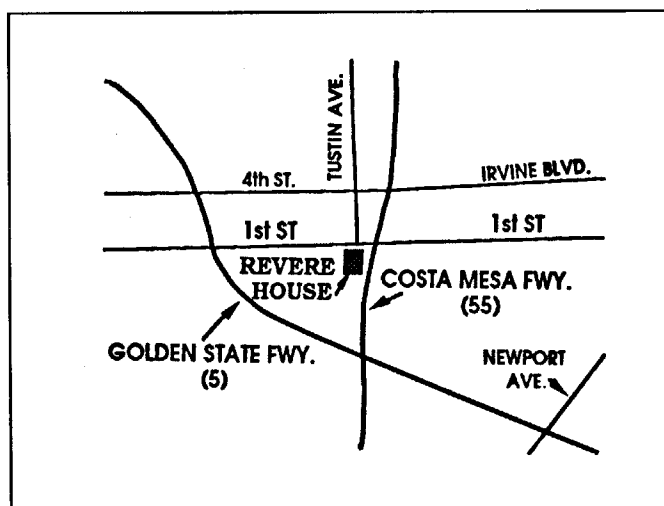
**Location: Revere House, 900 W. 1st St. @ Tustin Ave., Tustin**

**Cost: \$20.00**  
(\$10.00 for full-time students  
with valid I.D.)

**Social Hour: 6:00 pm**  
**Dinner: 7:00 pm**  
**Talk: 8:00 pm**

Make checks payable to:  
"SCGS"

Map to Meeting



**Deadline for submittals to  
the November Newsletter:  
October 18**

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## SEPTEMBER PROGRAM

### Evidence in the Sedimentary Record for Widespread Climatic Changes

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Richard Behl

*CSU Long Beach*

**R**ecent study of ice cores from Greenland found startling evidence for climatic fluctuations that occurred far more rapidly than the previously known 100,000-year glacial-interglacial cycles. Over twenty abrupt warming events took place throughout the last ice age, with temperatures in Europe and the north Atlantic increasing 5-10°C in less than a few decades. This raised a very important question: were these events simply local perturbations of the climatically sensitive far north, or are they evidence for dramatic climate change on a global scale? These questions have galvanized the Earth science community to search the world for records of these changes outside of the Greenland/North-Atlantic region.

In 1992, the international Ocean Drilling Program cored a 200m sedimentary sequence in the Santa Barbara Channel to collect a very high-resolution record of climatic and oceanographic change. In it, we have discovered a series of 19 ecologic upheavals in the marginal marine environment off central/southern California that are tightly correlated with the Greenland events. We find that the Santa Barbara Basin repeatedly switched from well oxygenated to very low oxygen levels in less than 50 years with dramatic associated ecologic change. Within a few decades ocean temperatures warmed as much as 8°C, and the structure of benthic and planktonic ecosystems was overturned. Just three months ago we discovered

similar, climate-related environmental changes in cored sequences (ODP Leg 167) of the nearby Tanner and Santa Monica Basins, supporting the hypothesis that ecologic change was widespread and probably synchronous along the northeast Pacific margin. These results suggest sensitivity of broad areas of the ocean-atmosphere-biosphere system to short climate change.



#### Biographical Information

Richard J. Behl is the new Assistant Professor of Stratigraphy/Sedimentology at CSU Long Beach's Department of Geological Sciences. Rick's current research focuses on the sedimentology and paleoceanography of the Pacific Rim and deep-sea upwelling zones, but he has also published on the origin of Monterey cherts, the relationship between diagenesis and deformation in fractured reservoirs, and the sedimentary record of plate tectonics. Rick earned his Bachelor's degree in Chemistry and Earth Sciences at UC San Diego, and his PhD in Earth Sciences at UC Santa Cruz. In between, Rick was a mudlogger and wellsite consultant for Epoch Well Logging and Exlog in the petroleum and geothermal industries. Rick has recently returned from sailing as a shipboard sedimentologist on ODP Leg 167, the first return of the international deep-sea drilling program to the California Margin in almost 20 years.  $\phi$

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### FROM THE EDITOR

This issue marks the 24th month of my stewardship of AEG's Southern California Section newsletter (with the exception of last July's), and I am now ready to pass it on. Prior to acceptance, the qualified applicant must

meet strict criteria determined by the current editorial staff. The requirements for editorship are as follows: 1) you must volunteer; 2) see number 1. If you would like to become editor of the AEG Southern California

Section newsletter, and meet the strict requirements set forth above, call, write, e-mail, or fax, your wishes to the editor at one or more of the following:

Office Ph: 818-458-4923  
Office Fax: 818-458-2913  
Home Fax: 310-645-4112  
e-mail: ctnestle@ix.netcom.com  
snail mail: 6224 W. 82nd Street, L.A., CA 90045-2901

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## MEETINGS

The Branner Club:

Thursday, September 19, 1996: Dr. Peter Weigand (CSUN) will speak on **Ecuador and the Galapagos: Volcanos, Animals, Evolution, and Darwin.**

Thursday, November 7, 1996: Michael Abrams (JPL) will present a talk entitled "Is Mexico City threatened by Popocatépetl? Evidence from prehispanic eruptions."

The Branner Club meets at the Athenaeum, Cal Tech, Pasadena (Hill Avenue and California Boulevard); social hour - 6:00pm, dinner - 7:00pm, talk - 8:00pm. \$25.00. For information call: Martine Alter at 818-248-7715.

## COMPUTER CORNER

Everything you ever wanted to know about the DMG's Seismic Hazard Zone Mapping Program can be found at: <http://www.consrv.ca.gov/dmg/shezp/> This site, which is continually updated, contains information on usage, limitations, and regulatory aspects of the maps; and portions and interpretation of the Seismic Hazards Mapping Act, including: purpose, definitions, requirements for mapping Seismic Hazards Zones, review of Preliminary Seismic Hazards Zone Maps, specific criteria for project approval, and waivers of geotechnical report requirements.  $\phi$

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## POLITICAL SCENE

Senate Bills 2031 & 1077 are now on Governor Pete Wilson's desk for approval. The Assembly passed the bill last Friday by a vote of 73 to 1. Assemblyman Bob Campbell cast the sole dissenting vote, but we do not know why he voted against these bills. The bills were then sent immediately to the Senate for concurrence, and last Saturday they were approved by a margin of 28 to 2.

Congratulations and thanks to everyone who helped see these bills through.

— Joe Cota

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## **GEOQUOTE OF THE MONTH**

"Ten percent of geologists know what they are doing and are trying to do a good job, fifty percent try to do a good job and don't know what they are doing; then there are forty percent who don't give a damn so it is not clear if they know what they are doing."

Jeff Johnson, 1990

reprinted here by an increasingly cynical editor

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