



## ASSOCIATION OF ENGINEERING GEOLOGISTS

Southern California Section

"Serving Professionals in Engineering, Environmental,  
and Groundwater Geology Since 1957"

### **NEWSLETTER - JUNE 2004**

#### OFFICERS

##### CHAIR

Tania Gonzalez  
714-412-2654

[tgonzalez@earthconsultants.com](mailto:tgonzalez@earthconsultants.com)

##### VICE CHAIR

Matthew Hawley  
(805) 579-3434

[mhawley@lqcgeo.com](mailto:mhawley@lqcgeo.com)

##### TREASURER

Brian Villalobos  
(714) 549-8921

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

##### SECRETARY

Jeff Kofoed  
(818) 889-0844

[jckofoed@hotmail.com](mailto:jckofoed@hotmail.com)

**Date:** **Tuesday, June 8, 2004**  
**Location:** **Steven's Steak House, 5332 Stevens Place, Commerce, CA**  
**Time:** **Social Hour: 6:00 PM; Dinner: 7:00 PM; Presentations: 7:45 PM**  
**Reservations:** **Call (949) 253-5924 ex 564, or email Brian Villalobos, by Noon, Monday, June 7**  
**Cost:** **\$25 per person with reservations, \$30 at the door; \$12 for students with valid student ID.**

**Presenter:** **Dr. Maria Teresa Ramirez**

**Topic:** **"Active tectonics, the Mexican subduction zone and the Pacific coast of Mexico: the Guerrero Gap and Jalisco Coast"**

**Abstract:** The Guerrero gap has a remarkable tectonic setting within a complex convergent margin - the Rivera-Cocos subduction zone. This tectonically active margin is characterized by the Rivera-Cocos plate subduction beneath the North American plate in southern Mexico. Subduction of the Rivera-Cocos plate under southern Mexico has generated more than 20 Ms > 7 earthquakes recorded during the last century. Rapid 5-7 cm/yr convergence generates major earthquakes on the subduction megathrust at 30-100 year intervals. The potential for major seismic events is confirmed by the great 1932 (Ms=8.1) Jalisco earthquake, the 1995 (Mw=8.0) Colima-Jalisco event, and by the 1985 (Mw=8.1) Michoacan earthquake that devastated densely populated areas of Mexico City (population ~20 million). The Michoacan earthquake caused ~3000 deaths and economic losses due to property damage amounted to hundreds of millions of dollars. The amplification of seismic waves in the lacustrine sediment-filled basin produced long period waves in Mexico City, located more than 300 km from the epicenter. *(Continued Page 2)*

**Biographical Info:** Dr. Ramirez is a geomorphologist and an expert in active tectonics in central and southern Mexico. She has particular experience in the investigation and assessment of active faults, landslides, and coastal erosion. She received her PhD from the University of Edinburgh, a M.Sc. from the National Autonomous University of Mexico (UNAM), and a B.Sc. and M.Sc. from the State University of Moscow "M.V. Lomonosov." She has worked internationally in the USA, Russia, Mexico, Argentina and Cuba. In addition to her duties as an Assistant Professor of geomorphology at CSULB, she has been the principal investigator for research studies funded by the National Science Foundation, National Geographic Society, the Mexican National Council for Science and Technology, and The Carnegie Trust.

**Abstract – Continued:** Currently, the Guerrero seismic gap stands out as region of high seismic potential. Major seismic events are known to occur in Guerrero, but none have occurred since the major Guerrero 1911 (Ms=7.6) earthquake. Since the 1911 event, > 5m of plate convergence has generated only a few Ms<6 events near the boundaries of this segment. The Guerrero seismic gap is therefore currently considered most likely to experience a severe earthquake of estimated Mw = 8.1 to 8.4, or several smaller events.

Stratigraphic and geochemical indicators of paleosalinity (Br > Sr > Ca >>Na > Cs >U) indicate changes in elevations relative to sea level, and suggest suddenness of these changes (e.g. coseismic events). Seven marine inwash events, and possibly three tsunami events are recorded by stratigraphic/sediment, and paleosalinity indicators. Microfossil analyses (in progress) are being used to confirm whether these horizons record marine inwash events (tsunamis). Radiometric measurements of 210Pb, 136Cs and 14C isotopes are used to date these events. Radiocarbon dates imply a sedimentation and subsidence rate of ~ 1 mm/yr.

The Pacific coast of Jalisco, SW Mexico, has been the site of two of the largest earthquakes to occur in Mexico this century: the 1932 (Mw 8.2) Jalisco earthquake, and the 1995 (Mw 8.0) Colima earthquake. Measurement and radiocarbon dating of emergent paleoshorelines along the Jalisco coast provide the first constraints upon the timing for tectonic uplift. Along this coastline, uplifted Holocene marine notches and wave-cut platforms occur at elevations ranging from ca. 1 to 4.5 m amsl. *In situ* intertidal organisms dated with radiocarbon, the first dates ever reported for this area, and elevations of marine notches record tectonic uplift during at least the past 1300 YBP at an average rate of about 3 mm/yr.

**CHAIR COLUMN (by Tania Gonzalez)**

The AEG Board of Directors met in Salt Lake City, Utah this past May 1<sup>st</sup> and 2<sup>nd</sup>. At that meeting, two important items were approved by the Directors: the AEG’s new Mission, Vision and Values (MVV) Statements, and the 2004 Strategic Plan. The new MVV statements are reproduced in page 7 of this newsletter for your information. As part of the review process, we received 18 comments from members regarding the draft statements published in November 2003. The final statements address some of the comments received, with emphasis on making the Mission statement shorter and more

engaging. Let me know what you think of the final statements.

AEG’s Strategic Plan will be unveiled in the next issue of the AEG News, but some of the programs and action items identified therein will hopefully soon become evident to all AEG members. One of the first items that will be addressed is improving AEG’s website. If you have specific suggestions on the site’s content, please let me know. I can put you in touch with the website committee. Calls for volunteers will be made shortly – this is a great way to give back to your organization!

Speaking of volunteering, your Section’s officers’ term will come to an end this coming September. With the exception of Matt Hawley, our current Vice-Chair, other officers have expressed a desire to NOT move forward. Therefore, we are looking for volunteers to take on the responsibilities of treasurer and Newsletter Editor/Secretary for the Section. If you want to nominate yourself or someone else for any of these positions, please contact Tania Gonzalez or Matt Hawley.

**YEAR 2004-2005 CONTRIBUTORS NEEDED**

Contributions from corporations and individual members for 2004-2005 will be greatly appreciated. Contributors will be listed in 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.

**2003-2004 CONTRIBUTORS (Thank You!)**

Earth Consultants International, Eldon  
Gath  
Joe Cota  
Robertson Geotechnical, Inc.  
**NEWSLETTER ADVERTISING**

Business Card	\$10/month	\$100/year
1/2page	\$20/month	\$200/year
1/4 page	\$35/month	\$350/year
Full page	\$50/month	\$500/year

***Is The Ground Letting Your Project Down?***

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## **EMPLOYMENT OPPORTUNITIES**

### **Subsurface Designs (5-04)**

Positions Available for Entry Level and Project Level Geologists. SubSurface Designs, Inc., an established Los Angeles geotechnical engineering firm, is seeking Entry Level and Project Level Geologists. Part-time and full-time positions available. The right qualified, independent and hard-working individual will be offered an excellent salary, profit sharing and benefit package commensurate with their experience. Equal Opportunity Employer.

For consideration, fax or email your resume in confidence to:

SubSurface Designs, Inc. Attn: Mark Triebold  
12872 Foothill Blvd.  
Sylmar, CA 91342  
818-898-1595 (office)  
818-898-4003 (facsimile)  
[mark@subsurfacedesigns.com](mailto:mark@subsurfacedesigns.com)

### **Gold Coast GeoServices, Inc. (3-04)**

Gold Coast GeoServices, Inc., in Camarillo has job openings for engineering geologists, geotechnical engineers, and soils technicians/laboratory technicians of all levels. Prior work experience or college level experience in Ventura and Los Angeles Counties is preferred. Please email resume with experience and qualifications to [general@goldcoastgs.com](mailto:general@goldcoastgs.com), or fax to 805-484-4295.



Petra Geotechnical, Inc. is currently seeking **geotechnical engineers, geologists, soils technicians, and deputy inspectors** at their Costa Mesa, Murrieta, San Diego, and Santa Clarita offices. Petra is a geotechnical, environmental, and materials testing firm that has provided professional earth science services throughout southern California since 1975. Typical projects include residential developments, commercial structures, educational and infrastructure facilities. We offer competitive salaries, excellent benefits, a comfortable working atmosphere, and a pleasant commute! Please submit your resume with references to Ms. Jennifer Griffin at email address [jgriffin@petra-inc.com](mailto:jgriffin@petra-inc.com), fax number 714.668.3770, or mailing address 3185-A Airway Ave., Costa Mesa, CA 92626

### **PAI Corporation (3-04)**

PAI Corporation is currently seeking a Hydrogeologist to assist in its environmental protection and restoration program at the NASA Ames Research Center in Mountain View, California. The incumbent works as part of a team to support the NASA Ames Research Center's Environmental Program. This is a senior level position. Job qualifications include, but are not limited to, the following:

- 1.) Bachelor's degree in hydrogeology, geology, or engineering, and 5 to 10 years relevant experience.
- 2.) Knowledge of general computer applications plus hydrological modeling, databases and GIS.
- 3.) Excellent verbal and written communication and organizational skills.
- 4.) Detail-oriented team player willing to support diverse environmental program responsibilities.
- 5.) Ability to understand the environmental issues affecting NASA Ames Research Center.
- 6.) Ability to perform fieldwork, including the collection of groundwater and/or soil samples.
- 7.) Knowledge of EPA analytical methods.

- 8.) Ability to work on multiple projects of varying priorities.
- 9.) Knowledge of federal, state of California, and local environmental laws and regulations and standards.

This is a summary statement of the responsibilities and qualifications for this position. PAI Corporation offers an excellent starting salary and benefits package. For consideration, please email your resume and salary requirements to [job4001@paicorp.com](mailto:job4001@paicorp.com). PAI Corporation is an Equal Opportunity Employer. A Comprehensive benefits package is included.

Company Job ID: 4001  
Job Title: Hydrogeologist  
Location: San Jose, CA (NASA Ames Research Center, Mountain View, CA)  
Company Homepage: [www.paicorp.com](http://www.paicorp.com)  
Contact: HR Manager  
By E-mail: [job4001@paicorp.com](mailto:job4001@paicorp.com)

### **Hargis + Associates, Inc. (3-04)**

Hargis + Associates, Inc., a San Diego based consulting firm specializing in hydrogeology and engineering, currently has opportunities in both our Mesa, Arizona and San Diego, California offices. We are currently looking to fill the following positions:

**Staff Hydrogeologist-Modeler:** Candidate would possess a M.S. Degree in Hydrogeology, and 2 to 4 years relevant experience, including experience with groundwater modeling and GIS. Candidate should possess strong writing and presentation skills. California registration is a plus. OSHA 40-hour training preferred, but not mandatory. Position may be based in San Diego, CA, or Mesa, AZ. Some travel may be required.

**Entry Level Engineer:** Candidate would possess B.S. Degree in Chemical, Civil, or Mechanical Engineering. Position will be based in San Diego, and may require some travel and field work. OSHA 40-hour training preferred, but not mandatory.

**Staff Engineer:** Candidate would possess B.S. Degree in Chemical, Civil, or Mechanical Engineering and EIT Certification, and two to four years of relevant experience, including design, operation, and maintenance of remediation systems. Masters degree and registration is a plus. Candidate should possess strong writing and presentation skills. Position will be based in San Diego, and may require some travel and field work. OSHA 40-hour training preferred, but not mandatory.

**Senior Engineer:** Candidate would possess B.S. Degree in Civil Engineering and registration in Arizona with ten+ years of relevant experience, including design, operation, and maintenance of remediation systems. Masters degree and/or California registration is a plus. Strong leadership, writing and presentation skills required. Position will be based in Mesa and may require some travel and field work. OSHA 40-hour training and MSHA training preferred, but not mandatory. Excellent opportunity for an experienced, registered Arizona Civil Engineer.

Hargis + Associates offers competitive salaries and benefits, and a challenging work atmosphere. Hargis + Associates is an Equal Opportunity Employer. To learn more about Hargis + Associates, please visit our website at: [www.hargis.com](http://www.hargis.com). Qualified candidates should send resumes, along with a cover letter summarizing experience and salary requirements to:

Hargis + Associates, Inc.  
Attention: Kim Stransky  
2365 Northside Drive, Suite C-100  
San Diego, CA 92108



## [AEG's New Mission, Vision and Values Statements](#)

### **Mission Statement:**

The Association of Engineering Geologists (AEG) contributes to its members' professional success and the public welfare by providing leadership, advocacy, and applied research in environmental and engineering geology.

### **Values Statement:**

AEG's values are based on the belief that its members have a responsibility to assume stewardship over their fields of expertise. In support of serving an international network of environmental and engineering geologists devoted to excellence, AEG values:

- Upholding sound principles of scientific inquiry with respect to the study and evaluation of geologic processes, their impact on humans, and the human impact on Earth
- Encouraging and facilitating ongoing education and training as well as supporting members in their dedication to their work
- Building public appreciation for how environmental and engineering geology contribute to public safety and the protection of property

### **Vision Statement:**

AEG is the acknowledged international leader in environmental and engineering geology, and is greatly respected for its stewardship of the profession.

AEG offers information on environmental and engineering geology useful to practitioners, scientists, students, and the public. Other geoscience organizations recognize the value of using and sharing AEG's outstanding resources.

AEG leads the profession in its advocacy for:

- Legislation
- Professional Licensure
- Regulation
- Codes and Standards

as each affects the practice of applied geosciences.

AEG's administration assures representation for all its members. Its outstanding staff assists members with a wide range of services that enable them to be more effective in their professional lives. Staff regularly reviews and modifies these services to adapt to the membership's changing needs.

AEG's membership continually grows. Members and students are attracted by the educational and networking opportunities, and the quality services provided.





**AEG Southern California Section**

**J. Kofoed**

**31129 Via Colinas #707**

**Westlake Village, CA 91362**