

# Inland Geological Society

July 2009

Newsletter of the Inland Geological Society

Volume 25 No. 7

**This Meeting:**

**Thursday,  
July 2nd**

**Time:**

**Social: 6:00pm  
Dinner: 6:30pm  
Lecture: 7:00pm**

**Location:**

**LSA Associates  
1500 Iowa Ave  
Suite 200  
Riverside, CA  
92507**

**(Map on Pg.4)**

**Coming to  
Dinner?**

**Please RSVP:  
By Friday 6/26  
(951) 782-3295  
dlass@  
waterboards.ca.gov**

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**July Speaker:**

**Megan Shadrick**

**Physics Student, California State University, San Bernardino, CA**

**Lasers in Geology: A Two Part Analysis in Destructive and Non Destructive Testing of Rocks and Minerals**

Abstract

LASER technology (Light Amplification by Stimulated Emission of Radiation) has captured the imagination of our modern society. Lasers are found everywhere from grocery stores and night clubs to advanced medical and scientific research centers. In the geological sciences, lasers are utilized for both destructive and non destructive uses such as well bore drilling and spectroscopy. Non destructive scientific lasers utilize the optical properties of coherent, monochromatic light to measure various properties of a rock or mineral, such as the composition or temperature. Destructive applications of lasers require a high power laser to remove portions of rock without damage to the surrounding rock body. This technology is being used to repair or create art sculptures and complete drilling operations for the oil and gas industry. High power fiber laser research was conducted at Gas Technology Institute of Des Plaines, Illinois to show proof of concept for drilling and other operations. This research also included work on methane hydrates, acoustic tomography and concrete cutting applications. This research was conducted under the supervision of Dr. Samih Betarseh and Mr. Brian Gahan during two summer internships in 2004 and 2005.

**Biography:**

Megan Shadrick recently graduated this past month with a bachelors of Science degree in applied physics with minors in mathematics and geology at California state university San Bernardino. She has been studying geology and geophysics under Dr. Don Buchanan for over ten years. Megan's undergraduate research in the field of Petrophysics was completed at two summer research internships with Gas Technology Institute of Des Plaines ILL. There she worked on a variety of research projects including high power fiber laser technology for the oil and gas industry as well as acoustic tomography, clean coal technology and Lissajous mathematics. Further research was conducted at CSUSB under Dr. Paul Dixon in ultrasonic phased array analysis.

**Tell us about what you have been working on!**

Tell us what you have been working on!

Have been working on an interesting project at work?

Maybe you have been conducting research that you can share with us!

Are you a student and would like you share your senior project?  
Your future employer may even be sitting in the audience listening!

Maybe you know of someone who would like to speak at a meeting!

Contact Steve Mains or Greg Johnson and get your name in the schedule!

P.O. BOX 9411, SAN BERNARDINO, CA 92427  
909-648-1357 • APOACH22@HOTMAIL.COM

## ALONZO POACH

### EDUCATION

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California State University, San Bernardino  
Completed June 2009

**Dual Major: B.S., General Geology and B.S., Environmental Geology**

Geology GPA=3.5.

- M.A.S.S. (Math and Science Scholar) scholarship, 2007-2009.
- Analyzing mineralogical genesis of nitrogen minerals and associated isotopic signatures of San Bernardino County funded by NASA's exobiology program.
- Geologic mapping projects include:
  - Tectonically deformed area around San Andreas Fault in San Bernardino Mountains from Badger Canyon to Sycamore Canyon.
  - Low angle thrust sheets in Mescal Range, eastern California.
  - Carbonate and shale units and associated thrust faults of the Horse range east central Nevada.
  - "Tape and Brunton" maps of underground mine workings in Rich Hill gold district, Stanton, Arizona.
- Completed Phase I study of Shandin Hills area, San Bernardino, CA.

### WORK EXPERIENCE

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California Regional Water Quality Control Board Lahontan Region  
June 2008 to Present

Victorville, CA, 92392

**Technical Student Assistant:** Directly assist engineers and geologists reviewing reports, organizing data for facilities, database management and general office work. Facility experience includes landfills, waste water treatment plants, mines, surface impoundments, and underground storage tanks.

California State University, San Bernardino  
April 2007 to June 2009

San Bernardino, CA, 92407

**Peer Advisor:** College of Natural Sciences; Under the direction of Cindy Paxton, Ph.D., Assistant Dean, provide academic information to science students (e.g. Physics, Nursing, Biology, Geology, and Kinesiology) regarding prospective educational goals.  
**Instructional Student Assistant:** Assist in evaluating and grading assignments in geology and natural science courses.

Camino West Coast Services/Tire Guys  
July 2005 to April 2008

Redlands, CA, 92373

**Auto Technician:** General vehicle repair including, but not limited to: engine repair/maintenance, brake repair, transmission repair/maintenance, and axle repair.  
Supervisor: Tim Unruh, Store Manager.

JC Penney Outlet  
July 2004 to July 2005

Ontario, CA, 91764

**Customer Service:** Assisted customers with returns and exchanges, sorted and assigned items to appropriate departments, departmental maintenance, delegated customer concerns to upper management, cashier.  
Supervisor: Michelle Bradford, Assistant store manager.

### SPECIAL SKILLS

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- Fluent in Spanish.
- Computer skills include: limited GIS experience, spreadsheet-programming and data analysis (Microsoft Excel), word-processing, Microsoft Access, and PowerPoint.
- Fabrication and repair (metal and wood) using a variety of professional tools.
- Experience using wire feed and "stick" arc welders, oxyacetylene torches, and plasma cutters (includes professional training).

### REFERENCES

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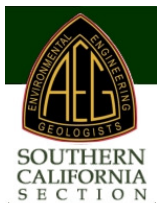
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## Upcoming Meetings/Events

### Rock & Gem Shows—Various locations

Various rock and mineral shows will be throughout southern California. To find one nearest you, visit [www.rockngem.com/showdates.asp](http://www.rockngem.com/showdates.asp)

### AEG—Inland Empire Short Course



Woody Hidgon, President of GEOTECH IMAGERY in Oceanside, CA, will be giving a talk on "Land-Use Photography & Videography".

The meeting will be held on **Wednesday, July 15, 2009** in Hemet, CA. For more details, please visit [www.aegsc.org/chapters/inlandempire/](http://www.aegsc.org/chapters/inlandempire/)

### SME—Southern California Section Summer Beach Party



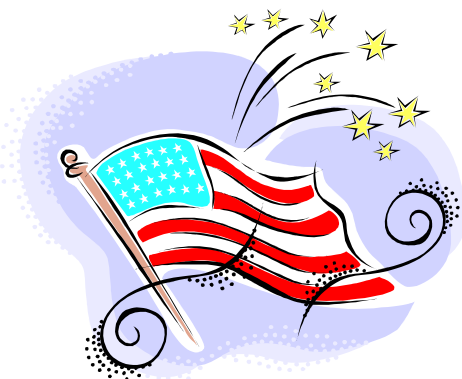
Society for Mining, Metallurgy, & Exploration will be having their summer beach party on **Saturday, August 15, 2009**. For more information, visit

[www.smenet.org/southerncalifornia/](http://www.smenet.org/southerncalifornia/)

### South Coast Geological Society



Miles Kenney will be giving a talk on the "Quaternary Deformation of the Eastern San Gabriel Mountains—Interaction of the San Andreas, San Jacinto and Cucamonga Fault Zones". The next meeting will be **Monday, July 6, 2009** at the Doubletree Club Hotel in Santa Ana, CA. For more info., visit [www.southcoastgeo.org](http://www.southcoastgeo.org)



## IGS Meeting Schedule

### **August 5, 2009 (Wednesday)**

Jeremy Lancaster, California Geological Survey  
*Alluvial Fan Task Force - GIS planning tool in the Santa Ana River Watershed*

### **September 3, 2009 (Thursday)**

Roy Herndon, Orange County Water District  
Dr. Tara Kneeshaw, CSU Fullerton  
*Battle to Provide Clean Water for a Growing Population*

### **October 7, 2009 (Wednesday)**

Suzie Earp, Water Resources Institute  
*1938 Santa Ana River Flooding in San Bernardino area*

### **November 5, 2009 (Thursday)**

Dr. W. Richard Laton, CSU Fullerton  
2009 McEllhiney Distinguished Lecturer  
*Boring Logs—What's Important and What's Not: A Scientific Viewpoint*

### **December 2, 2009 (Wednesday)**

Shelby Harrell, Student at CSU Fullerton  
*An Investigation of the Potential Surficial Recharge in Lucerne Valley Groundwater Basin, Western Mojave Desert, California*

### **January 7, 2010 (Thursday)**

Baird King, Student at UCR  
*A Record of Climate Change in the Rock Creek Drainage of the Eastern Sierra Nevada, CA3*

### **February 3, 2010 (Wednesday)**

TBA

### **March 4, 2010 (Thursday)**

TBA

### **April 8, 2010 (Wednesday)**

TBA

**IGS MEETING LOCATION:**

**LSA Associates, Inc.  
1500 Iowa Ave, Suite 200  
Riverside, CA 92507**

**2009 IGS OFFICERS****President**

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