MEETING DATE: Monday, March 2nd, 2015

Speaker: Dr. Gregory Holk, Associate Professor and Graduate Advisor from the Geology Department at CSU Long Beach

Topic: “Faults as Superhighways of Fluid Flow through Earth’s Crust” Circulation of aqueous fluids through Earth’s crust has profound effects on its geologic evolution. Major crustal-scale fault zones and crustal heat distribution both play a major role to determine fluid pathways. Case studies that showcase the interplay between crustal thermal evolution and these permeable zones are presented to demonstrate the importance of fluids on the tectonic evolution of Earth’s crust.

Bio: Dr. Holk is a stable isotope geochemist. He earned his Ph.D. from Caltech, where his dissertation defined the complex fluid regimes active during the tectonic and petrologic development of metamorphic core complexes. His research focuses on the circulation of aqueous fluids through Earth’s crust and the profound effects such fluids have on the geologic evolution of our planet. Before joining CSULB in 2000, Dr. Holk worked for two years in the mineral deposits group at the Geological Survey of Canada, where he developed stable isotope and other geochemical methods employed by the mining companies for the exploration of volcanic-hosted massive sulfide deposits that formed by large-scale hydrothermal activity on the seafloor. In addition, Dr. Holk worked at Queen’s University for two years, where he taught geochemistry courses and continued his work developing geochemical methods for mineral exploration that includes the utilization of Pb isotopes in the search for uranium deposits hosted at the unconformities of some of the world’s largest sedimentary basins (i.e., McArthur Basin, Australia).

At CSULB Dr. Holk teaches Mineralogy, Metamorphic Petrology, Earth Systems and Global Change, and Stable Isotope Geochemistry and serves as graduate advisor. Through numerous NSF grants, Dr. Holk has built the stable isotope laboratory located in the Institute for Integrated Research in Materials, Environments, and Societies. Continuing research includes: (1) an investigation of the role of fluids in deformational processes at the brittle-ductile transition in fault zones, (2) regional-scale isotope studies of one of the largest hydrothermal systems in the geologic record at the Canadian Cordillera, (3) studies that quantify the dehydration process during low-to-mid-grade metamorphism at the Otago Schist, New Zealand and Oroopia Schist, Southern California, and (4) the delineation of magma sources in an extensional continental arc environment, the Coastal Batholith of Peru.
Greetings to the SCGS Community -

Thank you for the great attendance last month to hear Dr. Kim Bishop talk about large landslides (sturtzstroms – if I’ve spelled it right!). The next time I will drive by Baker on the I-15 I’ll make sure to take another look at those isolated Paleozoic carbonates – are they remnants of landslides or not?

We continue to have good turnout for our meetings, especially students for which I’m grateful. Remember that this month we plan on having our monthly meeting at Cal State Long Beach to hear Dr. Gregory Holk, Associate Professor and Graduate Advisor from the Geology Department at CSU Long Beach. His presentation is titled, “Faults as Superhighways of Fluid Flow through Earth’s Crust” and he will be expanding on the circulation of aqueous fluids through Earth’s crust and its profound effects on its geologic evolution. Case studies that showcase the interplay between crustal thermal evolution and these permeable zones are presented to demonstrate the importance of fluids on the tectonic evolution of Earth’s crust.

Recently, the notice regarding call for papers went out for the 2015 Annual Field Trip to the Southern Sierras. As always, we are looking for ideas, papers, guidebooks, leaders for potential stops, etc., that will help to make the trip a success (see attached flyer). More will follow, but if you wish to contribute or participate, please contact me at robert.ruscitto@arcadis-us.com or robertruscitto@gmail.com.

Best Wishes,

Bob Ruscitto
2015 SCGS President
Don’t forget our March meeting will be held at the CSULB Chartroom. Address to the university is: **6049 E. 7th, Long Beach, CA**

Parking will be in **Lot 5** off of West Campus Dr. Below is a link and maps to the parking lot we will be using for the meeting. Park and head north to the café building.

[http://goo.gl/maps/Rjdtk](http://goo.gl/maps/Rjdtk)
2015 Membership Information

The regular membership rate continues to be $20 (deal!) and student membership continues to be free of charge. If you know a student, please forward them a form. Students, we want you here!

Interested in a corporate sponsorship? We hope so! Corporate sponsorships start at $250 and include the placement of a corporate logo and contact information in the monthly newsletter, on our website and in our annual guidebook. Your corporate sponsorship will enable us to continue to offer stellar field trips, publish our guidebooks and increase student attendance!

SCGS Links & Forms

South Coast Geological Society Links

Meeting Sign-up Page - www.southcoastgeo.org/meetings.shtml
Web Page - Southcoastgeo.org
Twitter - https://twitter.com/southcoastgeo
Linked-in - Please bug Jeff Miller about this page

South Coast Geological Society Forms

Membership Form - https://docs.google.com/document/
Corporate Membership Form -
Field-trip Release Form -
Field-trip Participation Form -
Publication Order Form - https://drive.google.com/file/

Discoveries

Mark Laymaster of Leymaster Environmental consulting is advertising to fill a senior Professional Geologist position at his firm. Mark is looking for someone at least 10 years of experience in the environmental field in Southern California. Preferably he or she would be in their 30’s and have excellent people skills and experience with remediation. In Marks words, “I started Leymaster Environmental Consulting in 2000 and we are located at the corner of Bellflower Boulevard and Atherton Street in Long Beach. I am looking to bring in some younger blood that eventually could hire replacements, run the company, and obtain partial ownership without paying any money. It is a great opportunity for the right person and they would very likely be making very good money within a couple years if they are the right fit.”

If interested contact Mark here: Mark@laymaster.net
6th Annual Geology Research Day

Department of Geological Sciences
California State University, Fullerton
Titan Student Union - Garden Café
Friday, April 24, 2015 from 3:00 - 6:00pm

Food, Drinks, Research, Professional Contacts, Prizes!!

Questions?
Email Rich Laton
wlaton@fullerton.edu

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**Upcoming Meetings and Links**


**February 18:** Chuck Houser - Calcite

**March 18:** Student Presentations


**January 22nd, 2015**—Prof. Donald L. Paul, University of Southern California:

Coast Geological Society: - [http://www.coastgeologicalsociety.org/meetings.html](http://www.coastgeologicalsociety.org/meetings.html)

CGS is host to PSAAPG's 2015 Annual Convention

**May 2-6 , Oxnard CA** - [http://www.coastgeologicalsociety.org/may25theenergywave.html](http://www.coastgeologicalsociety.org/may25theenergywave.html)


Meeting January 21st, 2015. **Desmond Chung** of Geobrugg North America, LLC :

Dirt can Hurt, Utilizing Flexible Solutions.


**February 25-28th**— AEG Professional Forum- Time to Face the Landslide Hazard Dilemma

Geologists Drinking Beer Facebook: - [https://www.facebook.com/groups/297259306826/](https://www.facebook.com/groups/297259306826/)


[http://www.rei.com/outdoorschool/162](http://www.rei.com/outdoorschool/162)


Irvine Ranch Conservancy: - [http://irconservancy.org/](http://irconservancy.org/)

[http://letsgooutside.org/activities/](http://letsgooutside.org/activities/)

National Ground Water Association: – [http://www.ngwa.org/Events-Education/Pages/calendar.aspx](http://www.ngwa.org/Events-Education/Pages/calendar.aspx)


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


ASCE Orange County Branch: – [http://www.asceoc.org/upcoming-events](http://www.asceoc.org/upcoming-events)

Board of Professional Engineers, Land Surveyors, and Geologists: -

[http://bpelsg.ca.gov/](http://bpelsg.ca.gov/)
The South Coast Geological Society (SCGS) is one of the most active geological societies in California. This is due to the continued excellent participation of its members, the celebrated monthly speakers, and the renowned annual field trips and guidebook publications. The SCGS is devoted to promoting the Earth Sciences and minimize business and political debate.

SGGS members include persons in geologic professions largely living and/or working in Orange County, California. Membership includes all disciplines, ranging from hydrogeologists to geotechnical engineers to petroleum geologists to mining geologists to environmental geologists to college professors to students. It is a society run by volunteers with the purpose of sharing geologic ideas and fellowship during monthly meetings and an annual field trip.

To encourage student membership and participation, the student membership dues are free, and dinner costs are reduced for all professors and students attending a meeting.

Corporate sponsorship is encouraged and greatly appreciated. Sponsorships assist by funding guidebook publication, offsetting the food and supply costs for the annual field trip and funding scholarships.

South Coast Geological Society is very thankful for the following Corporate Sponsors

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Bill Elliott
Fun for Geo-Nerds

Earth Crossword Clues

Across
1) Fault where one block of Earth’s crust is pushed on top of another
5) Computer in movie “2001”
7) Study of Earth’s layers. 14) 2 - 1 = _____
15) President Lincoln
16) Molten rock underground
18) The liquid part of the core is the ________ core
19) This type of fault:

20) Portion on Earth’s surface directly above the Focus of an earthquake
23) Higher block of crust between two normal faults
24) Rock type that forms from molten rock
25) Crust under the oceans
27) Beautiful stone of value
28) Sudden movement along a fault
30) Hard stuff Earth is made of - fun to throw
32) Unidentified Flying Object
34) A name for a felt, but weak, earthquake
36) Solid part of Earth consisting of crust and outer mantle
39) Common laminated metamorphic rock
41) Simpson with the skateboard
42) Solid water
44) You and me
45) Sedimentary rock of cemented sand grains
47) Earthquake caused ocean wave
48) A dog will chew on one
50) #5 on Mohs hardness scale
52) If #45’s grains are really small
53) An exploratory mine into a hillside
54) Bergs are made of this
56) Rocks are made of one or more
59) Pat your head and rub your ________
60) A small earthquake
61) Downward folded rock with youngest on top
63) A large fracture in Earth’s crust
64) A 1 to 10 hardness scale with diamond @ #10
66) Vader’s first name
67) These make up minerals
68) This type of fault:

69) Sun’s type of nuclear reaction

Down
2) Earthquake scale name
5) Lower block of crust between two normal faults
4) Famous Australian gemstones
5) Monkeys ________ by their tails
6) Molten rock on Earth’s surface
8) This part of Earth’s core is solid
9) Fault when “hanging wall” goes up
10) Orange potato looking veggie
11) Center of Earth
12) Rock type formed from erosion or solution precipitation
13) Crust making the continents
17) Earth’s “plastic” layer
19) Rusted iron in rock can give it this color
21) Large flightless bird
22) The point in Earth’s crust where an earthquake starts
23) Short for Hello
24) When it is in a solid state it is a mineral.
25) Rocks and/or minerals mined at a profit
26) This element is in Earth’s core with Iron
29) Zone of the Earth’s upper mantle, below the lithosphere
31) Volcanic “dust”
33) In a Normal fault this block goes up
35) Drill holes are also called ________ holes
36) Web and chain
37) Fault where blocks move horizontally
38) An abundant intrusive Igneous rock
40) Valentine’s Day goodies
41) Popular fishing fish
43) Sedimentary rock made up of other rocks
46) Layers of rock bowed upward with youngest on top
48) Main extrusive igneous rock found south of Spokane
49) Prefix meaning the opposite of
51) Pure carbon and the hardest mineral
55) A deep gulch or ravine, frequently dry (we have a dam named after one)
57) A prefix meaning one-billionth
58) Mineral property of light reflection
59) Softest mineral on Mohs Scale
62) Fleshy things on the side of your head
65) Where most Hydrogen is in our Solar System