Association of Environmental and Engineering Geologists

Inland Empire Chapter

of the Southern California Section

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October Newsletter

Volcanic Hazards of the Lesser Antilles Archipelago

Alan Smith, Ph.D.
Chair, Department of Earth Sciences
California State University-San Bernardino

Thursday, October 27, 2011

Note: This is a week later than our regular meeting date

5:30 – Social	UC-Riverside, Earth Sciences Dept., Outdoor Courtyard
6:15 – Dinner	UC-Riverside, Earth Sciences Dept., Outdoor Courtyard
7:15 - Speaker	UC-Riverside, Earth Sciences Dept., Classroom

Location

University of California-Riverside Department Geological Sciences
(Meeting Cost $25-27; Students $5); see meeting details on page 3
Co-sponsored by the Geology Club & the Earth Sciences Department

AEG-IE
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Abstract

Alan Smith, Ph.D., alsmith@csusb.edu

The Caribbean is famous for its white sand beaches, blue waters, its exotic rum drinks, and stories of pirates. It is also infamous for being the site of the worst volcanic disaster in the 20th century with the eruption of Mt. Pelee, Martinique in 1902, and the loss of 30,000 lives. Other recent activity include the 1902, 1971 and 1979 eruptions on Soufriere, St. Vincent, the 1976 eruption of Soufriere, Guadeloupe and the 1995-present eruption of the Soufriere Hills, Montserrat. Hazard assessment of the 19 potentially active volcanoes of the Lesser Antilles is complicated due to their short historic records (written historic records only began with European settlement in the mid-17th century), and relatively infrequent eruptions (only 4 of the 19 potentially active volcanoes have had magmatic eruptions in the last 350 years). For such volcanoes the only tool for understanding their volcanic histories and thus assessing their potential hazards are geological studies. The need for such studies become extremely important in view of the fact that three-quarters of the islands contain significant population centers located within hazard zones designated very high to high thus placing large percentages of the islands' populations at risk. Geological studies, including new geological maps and detailed stratigraphies, have allowed maps showing the areas of greatest risk to be constructed for each island. These studies have shown that pyroclastic flows dominate both the historic and pre-historic record, with effusive volcanism being mainly restricted to the generation of felsic domes.

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The AEG Inland Empire Chapter *Newsletter is a monthly publication of the Inland Empire Chapter of the Southern California Section, Association of Environmental and Engineering Geologists. For more information visit the Chapter website:* *http://www.aegsc.org/chapters/inlandempire.*

Submittals: Deadline, 28th of the month. Employment notices, job position announcements, and advertisements can be posted for a minimal fee. *Newsletter circulation about 170 in greater inland areas of Southern California, and elsewhere.*

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Abstract (continued)

The island of Dominica provides a special case of hazard assessment in that in an area of 750 km2, there are eight potentially active volcanoes, most of which are within 10 km of the capital of Roseau. In addition, Dominica is the site of the largest eruptions in the last 200,000 years in the entire Lesser Antilles. One such eruptive sequence, between 50,000 to 20,000 years ago, affected most of southern Dominica including the capital of Roseau (population 84,000), which is built on the pyroclastic flow fan produced by these eruptions.

Speaker Biography

Dr. Alan Smith received his B.S. degree from the Kings College, University of London, England and his Ph.D. from the University of California, Berkeley. Since 2000, Dr. Smith has been the Chair and Professor in the Department of Geological Sciences of the California State University, San Bernardino (CSUSB). Prior to joining CSUSB, he was the Professor and Chair Department of Geology, University of Puerto Rico at Mayaguez. In 2006, he received the California State University Wang Professor of Science Award. His research focus been in volcanology and volcanic hazards assessment, particularly of the Caribbean volcanoes. Dr. Smith has published two books (currently working on third book on geology of Dominica), five book chapters, over 60 peer reviewed publications, over 100 abstracts, many with undergraduate students as co-authors.

Soufriere Bay at Scotts Head, Dominica

OTHER MEETINGS

AEG-Southern California Section:

Oct 11, 2011 (Tuesday). ***"Subsurface Characterization at LADWP Headworks Reservoir Site, City of Los Angeles."*** Speaker: **David L. Perry**; AMEC Engineering and Consulting, Inc. Location: Cisco's Restaurant, 925 S. Westlake Blvd., Westlake Village, CA. For more information visit http://www.aegsc.org/

ASCE (Geotechnical Group – Riverside & San Bernardino): Oct 26, 2011 (Wednesday). ***"Dynamic behavior of levees on very soft peaty organic soil in the Sacramento - San Joaquin Delta."*** Speaker: **Dr. Scott J. Brandenberg**, Associate Professor, UCLA**.** Location: Zendejas Mexican Grill, 8106 Milliken Avenue, Rancho Cucamonga CA. For more information visit www.ascelasection.org

IGS: Oct 5, 2011 (Wednesday)**.** ***"Application of 3D Visualization of Assessing Depth Discrete Data Sets"*.** Speakers: **Walt Grinyer**, Geosyntec and **John Daverin**, Eastern Municipal Water District. Location: LSA Associates office, Riverside. For more info visit http://www.inlandgeo.org/

SCGS: Oct 3, 2011 (Monday). ***"Petroleum Hydrocarbon Forensics: Fundamentals and Applications."*** Speaker: **Jun Lu**, Ph.D. Principal Technical Specialist, AECOM. Location: Double Tree, Santa Ana. For more info about SCGS visit: http://www.southcoastgeo.org/

SDAG: Oct 19, 2010 (Wednesday). ***"Prelude to the 2011 Picacho Area Feld Trip***." Speaker: Gary Girty, Ph.D., CSU-San Diego. Location: Marina Village. For more info visit http://www.sandiegogeologists.org/

SME: Oct 18, 2011 (Tuesday). ***"TBA."*** Speaker: **Austin Marshall,** Mitsubishi Cement**.** Location: Pomona Valley Mining Company, Pomona, CA. For more information visit http://www.mine-engineer.com/socalmining/

October AEG-Chapter Meeting Info

Earth Sciences Department –
University of California- Riverside
Geology Building, 900 University Avenue
•Social/Dinner: Earth Sciences Dept. Outdoor Courtyard
•Presentation: Earth Science Dept. Classroom (TBA)
(SEE MAP NEXT PAGE)

Parking (see map next page):
•Park in Lot 13; Requires a $5 parking sticker available at the main University entrance kiosk.

NOTES:
1) Do not park in Visitor Lot 10, the closest lot to the Geology Building, or in any spaces in Lot 13 marked "Reserved."
2) Visitor Parking lot spaces are only good for only two hours at a time (NO CASH, Card only).
3) Beware, the staff of the Parking Police is extensive, and Lots are visited frequently to cite violators!

Directions (see map next page):
From the I-215 and US 60 in Riverside, EXIT at University Avenue and proceed eastward to the UC-Riverside Campus to park as shown on the attached map (page 4). Once east of I-215/60 turn right on Canyon Crest Drive to Parking Kiosk for the $5 parking fee. Proceed to Lot 13 Walk to the Geology Building; the Courtyard is on the west side of the Building.

Dinner Menu (cookout):

-Hamburgers	-Bratwurst
-Potato Salad	-Chips & Dip
-Dessert	-Drinks and water

Cost: Professionals $25; Students $5

RSVP: RSVP by COB Monday October 24, 2011 by emailing : aeginland@gmail.com

In Memoriam

It is with sadness that we note the passing of long-time Southern California Geologist

Bruce Schell

11/16/42 – 9/2/11

AEG Parking Instructions

1. Purchase **$5 Evening Permit** from Manned Kiosk on W. Campus Dr. (Note: Permits from automated permit dispensers are only good for 2-hours.)
2. **Park in P-13** (Parking Lot 13) off of Big Springs Rd. Park in any unmarked space. DO NOT park in housing spaces located at east end of lot or in any of the RED RESERVED spaces.
3. Walk to the Geology Building Courtyard.