

# SAN DIEGO ASSOCIATION OF GEOLOGISTS

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

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## *SDAG MEETING ANNOUNCEMENT*

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WEDNESDAY, March 18, 2015

### ***Presentation Double Header!!***

#### **MONITORING TURBIDITY IN BAYS WITH CORAL REEFS: ST. JOHN, US VIRGIN ISLANDS**

*Presented by:*

**Tyler Barnes**

Undergraduate Environmental Studies, University of San Diego  
SDAG 2014 Scholarship Recipient

#### **USING THE WORKING CLASSIFICATION OF LANDSLIDES TO ASSESS THE DANGER FROM A NATURAL SLOPE**

*Presented by:*

**Dr. David Cruden**

Emeritus Professor, Civil & Environmental Engineering and Earth and Atmospheric Sciences  
University of Alberta, Canada

**Where:** **Emiliano's Mexican Restaurant**  
6690 Mission Gorge Road, Suite E  
San Diego, CA 92120  
Tel: 609-284-2430

**Directions:** FROM INTERSTATE 15: Take the FRIARS ROAD exit. Proceed east. Friars Road bends to the northeast and becomes Mission Gorge Road. Emiliano's is located on the west side of the road, just north of the intersection with Zion Avenue. To get into the parking lot (parking space is limited!), you must pass the restaurant and make a U-turn at Old Cliffs Road.

**When:** 5:30 pm - Social Hour  
6:30 pm - Dinner  
7:30 pm - Program

**Dinner:** Mexicano Fantastico. Cash bar

**Cost:** \$30 per person, \$5 discount for members, STUDENTS: \$15. Add \$5 if you did not make a reservation.



**Reservations:** Make your reservation online at [www.sandiegogeologists.org](http://www.sandiegogeologists.org) **no later than noon, Monday March 16th**. Reservations cannot be guaranteed after Monday at noon; but are always preferred over walk ins. Reservations well before the deadline are MUCH appreciated.

## **ABSTRACTS**

### **MONITORING TURBIDITY IN BAYS WITH CORAL REEFS: ST. JOHN, US VIRGIN ISLANDS**

Land-based sedimentation and turbidity contributes to declining coral reef conditions in the US Virgin Islands. Not only does turbidity smother corals, but also blocks light, which interferes with the ability of zooxanthellae to photosynthesize. Unpaved roads and other watershed development activities increase runoff volumes to near-shore marine systems, often resulting in increased turbidity. Residents of Coral Bay, St. John, USVI are concerned with the impact of local development on turbidity, but are unsure how to monitor turbidity effectively. The objectives of this study were: 1) to determine the appropriate frequency of sampling to capture turbidity variation, and 2) to describe what factors influence nearshore and offshore turbidity in Coral

Bay, St. John, USVI. At a nearshore and an offshore site within Coral Bay, St. John, USVI, turbidity was monitored at a monthly frequency by measuring water sample total suspended solids (mg/L) and at a ten-minute frequency by measuring the backscatter of light using nephelometers (NTU). A simulated storm experiment was conducted to produce a calibration between the two measurement techniques and test the duration of turbidity plumes. Turbidity was found to be highly variable and turbidity plumes relatively short-lived (minutes- hours). However, the monthly sampling did not capture the natural variation. Therefore, high frequency sampling (minutes) is necessary to properly monitor turbidity variation in Coral Bay. Regional wave height, used as a proxy for hydraulic energy in the bay, and rainfall data were collected to investigate factors that influence turbidity. Regression analysis showed a correlation between regional wave height and turbidity, suggesting that energy influences turbidity variation. Though particularly high rainfall events may result in high turbidity at the nearshore location, there was no correlation between rainfall and turbidity. However, the terrigenous composition of both nearshore and offshore suspended solids suggests that rainfall introduces land-derived sediment into the system but that waves re-suspend sediment from the seafloor and produce turbidity plumes. Thus, proper land-use planning, aimed at reducing runoff volumes, may decrease turbidity.

### **USING THE WORKING CLASSIFICATION OF LANDSLIDES TO ASSESS THE DANGER FROM A NATURAL SLOPE**

An essential input to any calculation of the stability of a natural slope is a hypothesis about how the slope may move. No formal method for estimating likely kinematic modes of slopes exists unless the slope is currently moving or has moved in the past. A working hypothesis is that similar slopes in similar materials move in similar modes in response to similar causes.

During the IDNDR (1990-2000), the IAEG Commission on Landslides contributed to the Working Classification which records an international consensus on types of landslides. A landslide can be typed by a term describing the natural materials before they were displaced and a second term describing the movement. Materials are rock, debris or earth; earth may be sand, silt or clay. Movements may be falls, flows, slides, spreads or topples.

Water conditions in the displaced material may range from dry thru' moist and wet to very wet. In permafrost terrain, frozen and thawed displaced material may occur. Water conditions, material and mode of movement may govern the rate of movement of the displacing mass. It can range from extremely slow to the extremely rapid movements which may have catastrophic impacts.

Activity, its distribution and style may affect anticipated modes of movement in assessed slopes. Slopes may be active suspended, reactivated, dormant, abandoned, stabilized, repaired, or relict. Styles of movement may be complex, composite, successive and multiple. Compilations of the historic activity of similar slopes as landslide inventories suggest hazard scenarios which can form plausible initial hypotheses for risk assessments.

## **SPEAKER BIOS**

### **SPEAKER BIO - TYLER BARNES**

As a San Diego native, Tyler grew up fascinated by the workings of the natural world, particularly coastal environments where he spent most of his summers. Tyler enjoyed an interdisciplinary education in environmental studies at the University of San Diego, where he soon met Dr. Sarah Gray and became involved in her US Virgin Islands sedimentology research. While working in Dr. Gray's lab, Tyler has enjoyed not only the fieldwork that included scuba diving in the Caribbean, but also the satisfaction of communicating findings with peers. He looks forward to continuing his education and research in marine geology, hopefully beginning his graduate studies this fall.

### **SPEAKER BIO - DR. DAVID CRUDEN**

Dr. David Cruden, Emeritus Professor of Civil & Environmental Engineering and of Earth and Atmospheric Sciences at the University of Alberta, Canada, is a recent Varnes medalist of the International Consortium on Landslides, a Legget medalist of the Canadian Geotechnical Society and a Julian Smith medalist of the Engineering Institute of Canada for his contributions to landslide studies. During the International Decade for Natural Disaster Reduction (1990-2000), he led the collaboration of the International Geotechnical Societies that produced the Working Classification of Landslides for the International Union of Geological Sciences. He chaired IAEG's Commission on Landslides from 1988 to 1995. He has published textbooks on engineering geology and terrain analysis along with three hundred technical papers. He was an Associate Editor of the Canadian Geotechnical Journal for 20 years & is presently an Advisor to the Editorial Board of "Landslides". He continues to suggest extensions to the Working Classification of Landslides.

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## ***UPCOMING MEETINGS***

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Meetings are usually held on the 3rd Wednesday of the month but may change to accommodate the speaker and meeting place schedules. Check the SDAG web site for updates.

April 15, 2015	Student Presentations – Part II
May 12, 2015 (TUESDAY)	Monte Marshall – Geology of the Polynesian Islands
June 1, 2015 (MONDAY)	Eric Drummond – Ice Cold Gold – Joint SDAG/SCGS Meeting

## **2015 SDAG EXECUTIVE COMMITTEE**

**PRESIDENT** – Jennifer Bauer Morton; [geologyjen@yahoo.com](mailto:geologyjen@yahoo.com)

**VICE PRESIDENT** – Randy Wagner; Ph: (760) 877-3490 [randallwagner@live.com](mailto:randallwagner@live.com)

**SECRETARY** –Rupert Adams, [rsa\\_sdag@geoconinc.com](mailto:rsa_sdag@geoconinc.com)

**TREASURER** – Chris Livesey, [liveseychris@yahoo.com](mailto:liveseychris@yahoo.com)

**PUBLICATIONS** – Lowell Lindsay; *Sunbelt Publications*; Ph: (619) 258-4911, x111; fax:(619) 258-4916;  
[llindsay@sunbeltpub.com](mailto:llindsay@sunbeltpub.com)

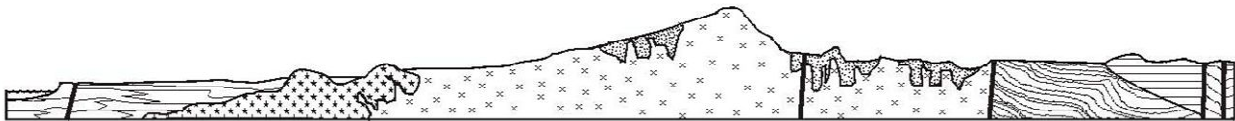
**WEBMASTER** – Carolyn Glockhoff; *Caro-Lion Enterprises*, Ph: (858) 549-3396; [carolyn@caro-lion.com](mailto:carolyn@caro-lion.com)

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## ***2015 SDAG MEMBERSHIP***

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Although its past the beginning of the year, dues are always welcome at any time!. The regular membership is \$25 (only \$5 for students) while the sponsor membership starts at \$100. Both forms are included on the following pages or they can be found on the home page of the SDAG website.



# SAN DIEGO ASSOCIATION OF GEOLOGISTS

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

## 2015 MEMBERSHIP FORM

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_

Please type or print clearly.

Home Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Work Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

*Please include company, university or other affiliation*

Home E-mail Address: \_\_\_\_\_

Work E-mail Address: \_\_\_\_\_

**NOTE:** Your membership dues include delivery of the monthly SDAG newsletter and announcements to the email addresses given.

Phone: Home: \_\_\_\_\_ Work: \_\_\_\_\_ Cell: \_\_\_\_\_

Website: \_\_\_\_\_

Are you willing to serve as an **officer**? \_\_\_\_\_ Are you willing to volunteer as a **guest speaker**? \_\_\_\_\_

Field(s) of Interest: \_\_\_\_\_

Dues: \_\_\_\_\_ Student Member (email delivery only) \$ 5.00

(check choice)

\_\_\_\_\_ Regular Member (email delivery only) \$ 25.00

\_\_\_\_\_ Donation Student Scholarships \$ \_\_\_\_\_

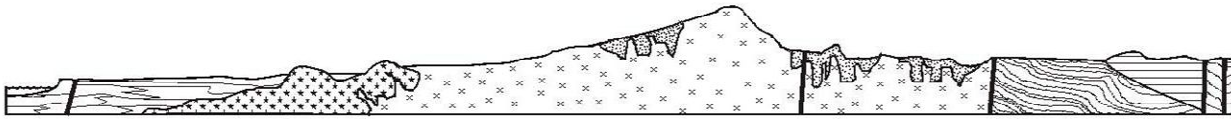
New/Returning Member  Continuing Member

Please enclose a check payable to SDAG, and mail to:

San Diego Association of Geologists (SDAG)

3130 N Evergreen Street

San Diego, CA 92110



# SAN DIEGO ASSOCIATION OF GEOLOGISTS

## 2015 SPONSORSHIP FORM

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_  
(as you would like it to appear in Newsletter, Website, and Guidebook)

Please type or print clearly, and check  preferred mailing address below.

Residential Address: \_\_\_\_\_  
\_\_\_\_\_

Office/School Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Website: \_\_\_\_\_

Home E-mail Address: \_\_\_\_\_

Work E-mail Address: \_\_\_\_\_

*NOTE: Your Sponsorship includes a complimentary SDAG membership, and delivery of the monthly SDAG newsletter and announcements to the email addresses given.*

Phone: Home: \_\_\_\_\_ Work: \_\_\_\_\_ Cell: \_\_\_\_\_

### Donation Level and Consideration:

**EMERALD \$100.00** (In addition to monthly recognition for your contribution, you are entitled to a free Internet "link" from SDAG Website. We also list all Sponsors in any publications printed this year)

**RUBY \$500.00** (In addition to the above, you are entitled to an image of your business card in the monthly newsletter and SDAG Website)

**DIAMOND \$1,000.00** (In addition to the above, you will receive a commemorative plaque in recognition for your most generous support of the organization)

New Member / Donor  Continuing Member  Change of mailing address:

Are you interested to serve as an officer? \_\_\_\_\_ Willing to volunteer as a guest speaker? \_\_\_\_\_

**Please make check payable to San Diego Geological Society, Inc., a 501(c)3 public benefit nonprofit educational corporation (in order to claim a tax deduction), and mail to:**

San Diego Geological Society, Inc.  
3130 North Evergreen St.  
San Diego, California 92110 **Thank you!**

*Donations may also be made  
at monthly meetings.*

*Revised 11/18/2014*

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## ***SDAG PRESIDENT'S CORNER***

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### **Greetings SDAG Members!**

We were treated to a fantastic mineral display by former SDAG President Chuck Houser last month. Chuck always gives an enjoyable and entertaining talk. I think I've become convinced that calcite is the most interesting of all the minerals! We mixed it up a little with a new menu at Marina Village – I hope everyone enjoyed it! Thanks again to Cari Gomes for bartending at the Walawender Tavern!

We have a last-minute change in schedule for the March meeting. Initially, we had planned two months of back-to-back of student presentations. However, I received a message from a visiting professor offering a talk for our March meeting. Dr. David Cruden, Emeritus Professor of Civil & Environmental Engineering at the University of Alberta Canada, and Varnes medalist of the International Consortium on Landslides, will be vacationing in Ocean Beach this month and offered to give his presentation on landslides. He has graciously agreed to share the spotlight with one of our five student scholarship recipients.

Speaking of student scholarships, I wanted to remind everyone that your membership dues help support the scholarships we provide every year. As a 501(c)(3) educational non-profit organization, student scholarships are one of our top priorities. Therefore, I'd like to ask each of you to renew your SDAG membership, if you haven't done so already – please help support the students!

Next month we will return to Emiliano's to hear from the remainder of the student scholarship winners.

Lastly, check out the SDAG website for new information on the upcoming 2015 field trip. Abstracts are due May 29<sup>th</sup> for the guidebook!

See you at Emiliano's on the 18<sup>th</sup>!

**Jennifer Bauer Morton, PG**  
**SDAG President**



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# ***ANNOUNCEMENTS***

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## **CALL FOR PAPERS - SDAG 2015 FIELD TRIP**

**“Western Salton Trough Regional Tectonics, Coyote Mountains and Vicinity”**

**Late October or Early November, 2015  
(Most Likely November 6-8, 2015)**

On this field trip we will explore the complex geologic history of the western Salton Trough as expressed in the Coyote Mountains north of Ocotillo. Paleozoic miogeoclinal metamorphic rocks, coarse-grained Mesozoic intrusive rocks, and Cenozoic sedimentary rocks and fanglomerates have been deformed by major faulting. Complex structure challenges interpretation. We seek to examine revealing outcrops that help to illustrate the stratigraphy, structure, and regional geology in this area. We will also consider the mineral potential, tectonics of the region, and resulting landforms.

SDAG seeks new manuscripts based on original work relating to regional geology and tectonics, from the western Salton Trough in San Diego and Imperial counties, and Baja California. We also invite authors to submit articles on the history of the region as it relates to geology and geomorphology.

### **Deadline for Abstracts: Friday, May 29, 2015**

Please submit the following information along with abstracts:

- Title
- Author(s) and affiliation
- Address, email, and telephone numbers for the author(s)

Submit abstract by e-mail to Randy Wagner: [randallwagner@live.com](mailto:randallwagner@live.com) (760) 877-3490

## **PACIFIC SECTION SEPM - FIELD TRIP TO HAWAII**

The Society for Sedimentology (SEPM) has a tremendous fieldtrip planned for August this year (8/2-8/2015) entitled “Sediments of a Mid-Plate Volcanic Island Complex”. Full details are included at the end of our newsletter, but it involves 6 nights of geologic comradery, Mai Tai and Margarita consumption...and a firsthand look at the mountain glacial deposits of Mauna Kea and the genesis of Hawaiian beach and coastal eolian dune deposits!

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## *CALL FOR ARTICLES*

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SDAG invites members to submit articles on their current research or an interesting project they are working on for publication in the monthly newsletter. The article should be no more than 1 page in length. Photos are welcomed; too. Please submit articles to the SDAG secretary via email.

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## *SDAG RESEARCH TOOL*

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**SDAG RESEARCH TOOL** - A comprehensive listing of all papers published by SDAG, whether as annual field trip guidebooks or special publications, is now available on our website. Entries are sorted by primary author, or chronologically by date of publication, from our first guidebook in 1972, up the San Luis Rey River in 2013, and from Coast to Cactus in 2014. These can be accessed or downloaded as .pdf files. They are fully searchable in Adobe Reader or Acrobat, so if you are researching a topic, "tsunami" for example, you can search for that keyword. This listing will be updated as new books are published. Thanks to Greg Peterson and Hargis + Associates, Inc., for making this possible. See the links below:

[http://www.sandiegogeologists.org/SDAG\\_Pubs\\_authors.pdf](http://www.sandiegogeologists.org/SDAG_Pubs_authors.pdf)

[http://www.sandiegogeologists.org/SDAG\\_Pubs\\_chronological.pdf](http://www.sandiegogeologists.org/SDAG_Pubs_chronological.pdf)

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The 2015 GSA Annual Meeting will be November 1 - 4, 2015  
in Baltimore, MD, at the Baltimore Convention Center

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## ***SDAG MONTHLY PHOTO COMPETITION***

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That's right!...It's back, the SDAG monthly photo competition, featuring the very best of member photo submissions from around the County and beyond. The prize is one free drink at the next meeting, so if you're a winner, just see our resident bartender extraordinaire, Cari Gomes at the next meeting.....or myself (The Secretary) if it's not a SDAG libation supplied event.

This month's winner is the esteemed Mike Hart!



***Rock slope failure, Alpine, CA. Cut slopes in granitic rock have an undeserved reputation for being stable.***

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## **Geology Job Opportunities**

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**Tetra Tech EC, Inc. currently has an opportunity for an Associate Geoscientist at our San Diego, CA location.**

### PRINCIPAL DUTIES AND RESPONSIBILITIES:

- Assist the Project Manager with project management related activities.
- Participate in project site management including health and safety oversight (approximately 25 -50% travel/field work, typically 1 to 4 week duration, in a range of weather conditions).
- Direct field work associated with soil and groundwater investigation including; soil sampling; well installation, development and sampling; soil and groundwater remedial design, monitoring, and optimization.
- Prepare portions of project proposals and work plans, assisting in finalizing work plans.
- Review work plans for completeness and conformance to the project scope.
- Prepare Statements of Work for subcontracts and material and equipment procurements.
- Perform technical analysis of responses to RFPs for project subcontracts, materials and equipment.
- Remain current with applicable environmental, safety and quality control requirements.
- Prepare thorough documentation of site activities, monitor project schedules and subcontractor performance and take action to correct issues when needed.
- Prepare Project Closure and Remedial Action reports.
- Assist with preparing project reports, correspondence and cost tracking/status.
- Perform various other duties as assigned.

### EDUCATION AND EXPERIENCE:

- Minimum Bachelor's degree from an accredited institution with a focus in Geology, Hydrogeology, or a related field. Master's preferred.
- 5-7 years of applicable experience in logging borehole geology and installing groundwater monitoring wells using hollow stem auger, direct push and sonic drilling techniques.
- PG or GIT registration.
- 40-HAZWOPER training certificate.
- Previous DOD, USACE, or other government contract experience a plus.
- Proficiency in CAD, GIS, Excel, Access, and aquifer modeling software would be a plus.

Tetra Tech is a leading provider of consulting, engineering, and technical services worldwide. We are a diverse company, including individuals with expertise in science, research, engineering, construction, and information technology. Our strength is in collectively providing integrated services—delivering the best solutions to meet our clients' needs. With more than 14,000 employees worldwide, 350 offices worldwide and \$2.5 Billion revenue in 2014, Tetra Tech's capabilities span the entire project cycle. We offer competitive compensation and benefits and are searching for innovative people to join our teams.

Candidates who are interested in joining our dynamic team should submit a resume to Tetra Tech Inc., at [www.tetratech.com](http://www.tetratech.com). Please mention the position that you are applying for in your cover letter and include

salary requirements. A pre-employment drug screen is required. Tetra Tech, Inc. is an Equal Opportunity Employer and we value workplace diversity. We invite resumes from all interested parties including women, minorities, veterans and persons with disabilities. Tetra Tech is a VEVRAA federal contractor and we request priority referral of veterans for available positions.

**Southern California Soil and Testing, Inc. (SCST) currently has an opportunity for a Staff/Project Level Geologist at our San Diego, CA location.**

Southern California Soil and Testing, Inc. (SCST) has been providing professional engineering and construction support services since 1959. Our understanding of the region and experience with local conditions and agencies has resulted in the successful completion of thousands of projects for 55 years. With offices in Los Angeles, Inland Empire, Central Valley and San Diego, SCST provides the opportunity to work on a wide range of projects.

Currently, we are seeking an experienced geologist for our San Diego location. The ideal candidate will have 3 to 7 years of geotechnical experience. Soils technician is experience required; Southern California experience preferred but not mandatory. Job duties require experience with logging and sampling exploratory borings and test pits, in-grading problem solving, report writing, and proposal preparation. Must be proficient in MS Word and Excel; CAD preferred but not mandatory. SCST offers room for professional growth and management training.

SCST offers competitive compensation and a full benefit package that includes medical / dental / life insurance, 9 paid holidays, vacation time and sick leave, and a company 401(k) Plan. For immediate consideration please Email a resume and references.

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## **Geology Job Seekers**

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**We have heard from many upcoming geologists at our recent meetings, all of whom are seeking work opportunities here in San Diego. Included herein, in no particular order, are bio's and contact information of our members looking to gain a foothold in the local professional community:**

**ENVIRONMENTAL GEOLOGIST** - I am a highly talented, innovative, and resourceful Geologist looking to take my skills to an environmental firm in San Diego County. I obtained my BS in Geology from University of California, San Diego. For the past 3 years I have been working at Scripps Institution of Oceanography as a research Geochemist where I have obtained the knowledge of proper field investigation technique in collecting groundwater and gas samples. I am very interested in geotechnical work, site assessment, and/or remediation work. I also have completed my 40hr HAZWOPER. Detailed resume upon request. Please feel free to contact me with any questions via email or phone. Keith Blackmon, [blackmonkeith@gmail.com](mailto:blackmonkeith@gmail.com) 805-910-6347.

**SENIOR GEOLOGIST** - Bilingual English and Spanish speaker with 12 years of experience in geological, geotechnical, and hydrogeological investigations for civil projects such as highways, railway lines, dumping sites, dams and residential buildings. A postgraduate specifically trained in environmental management and groundwater hydrology. Skilled in site management, drilling campaigns, and supervision of geotechnical laboratory and site tests.

Detailed work experience, education, and recommendations at <http://www.linkedin.com/in/sergiopostigo/>. Email [sergiopostigo@yahoo.com](mailto:sergiopostigo@yahoo.com) or call Sergio Postigo at 619-450-3642

This is Farida Baxamusa, MS- Earth Science from Scripps Institution Of Oceanography (SIO), University of California, San Diego (UCSD). I am originally from India, and have another Master's in Earth Sciences from St. Xavier's College, University of Mumbai, India. I have also been granted the Dr. Ratan Nadirshaw Sukeshwala and Dr. Dayanand Dattatraya Yellur scholarship for securing highest rank in Earth Science at MS Part I and Part II. After completing my MS in India, I secured an internship at Oil and Natural Gas Corporation (ONGC), Mumbai, India. Later I worked as an Earth Science lecturer at St. Xavier's College, University of Mumbai, India where I held classes, directed discussions among large groups ranging from 35 to 80 students on mineralogy, petrology, geochemistry, crystallography, economic geology, oceanography, and plate tectonics and led lab courses involving mapping, stratigraphy, and paleontology. In September of 2013, I was accepted at SIO, UCSD for a master's program. Dr. Lisa Tauxe was my advisor and I worked as a research assistant under her in the field of paleomagnetism. I worked in the paleomagnetism laboratory where I skillfully selected quenched rock materials from lava flow samples to obtain accurate estimates of the Earth's magnetic field intensities. I developed python scripts to analyze individual samples to obtain their paleointensity values. I also worked as a teaching assistant for a year where I assisted teaching undergraduates introductory geology and Earth processes, collaborated with other teaching assistants and professors to aid in conducting an introductory course about hydrologic processes on Earth and held office hours, tutored students, proctored and graded exams. Around the time of completion of my degree I presented my year's research to the faculty members of the Geoscience Research Division (GRD) and qualified for my MS in Earth Science and graduated in September of 2014. I am currently doing 3 part time jobs, one as a Staff Research Associate at SIO, the other as a Staff scientist at the Bodhi Group where I perform phase I site assessments, and the third as a geology education website volunteer at California Coastal Commission Public Education Department, CA. I am now actively looking for a job in environmental consultancy firms or educational institutions. I believe that I have a varied background and education and the perseverance and grit in achieving excellence in everything I do. If you have any advice, jobs, internships please feel free to contact me at fbaxamus@ucsd.edu or call me on 858-397-8456. Your help and guidance will be highly appreciated.

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## REQUEST for 2015 SDAG/SDGS and PUBLICATION SPONSORS

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On behalf of the San Diego Geological Society, Inc. (SDGS), a public benefit 501(c)3 nonprofit educational corporation, we would like to request tax deductible Donations for our San Diego Association of Geologists (SDAG) group. The list of paid Sponsors and the forms to become a Sponsor are located on the SDAG web site at: <http://www.sandiegogeologists.org/Sponsors.html>.

Your donation will further the SDGS mission to promote geology and related fields in the greater San Diego region, operating through the San Diego Association of Geologists (SDAG), a committee of SDGS. To achieve our primary educational objective, we organize frequent field trips and maintain a program of monthly meetings featuring speakers on current geological topics. We also publish field trip guidebooks and other publications related to geology and natural history. We encourage scholarship and research by awarding scholarships from the elementary through graduate levels. With your \$100 "EMERALD" donation, your name/business will be listed as a sponsor on the SDAG web site (<http://www.sandiegogeologists.org/>) and in the monthly SDAG meeting newsletters. With your \$500 "RUBY" or \$1,000 or more "DIAMOND" level donation, your business card will also be included on the SDAG web site and in the monthly SDAG meeting newsletters. In addition, as a "\$1,000 or more DIAMOND" level donation you will be presented with a thank you plaque.

Should you have any questions regarding a Sponsorship, please contact our non-profit SDGS Secretary (Diane Murbach) at 619-865-4333.

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### Geology Books for Sale

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A local geologist has a large collection of historic books for sale on coastal geology, sedimentology, marine geology, and oceanography, many of which are out of print. If interested, please email Gerry Kuhn at [gerrykuhn@gmail.com](mailto:gerrykuhn@gmail.com).

Here is a preliminary list of the publications for sale:

- 1858.** Mathew F. Maury. The Physical Geography of the Sea. Harper and Brothers, Publishers., New York, 570pp. w/plates (Good).
- 1880.** Dana, J.D., Manual of Geology: Treating of the Principles of the Science, with special reference to American Geological History. 3rd edition, Ivison, Blakeman, Taylor and Co., Publishers, Trubner and Co. London. (Good)
- 1886.** Winchell, A. Walks and Talks in the Geological Field. Chautauqua Press, NY., 329pp. (Good).
- 1890.** Charles Darwin. On the Structure and Distribution of Coral reefs; also Geological Observations on the Volcanic Islands and parts of South America; Ward, Lock and Co., London., 549pp. (The Minerva Library of Famous Book, ed. G.T.Bettany). (Fair to Good).
- 1891.** Le Conte.J., Elements of Geology., Appleton and Co. NY., 640pp. (Fair).
- 1898.** Green, J.R., A Short History of the English People (with maps and tables), New Edition, Revised., Harper and Brothers, Publishers., New York and London, 871pp. (Fair to Good).
- 1903.** LeConte, J.. Elements of Geology. 5th edition., D. Appleton and Company., 667pp. (Fair).
- 1904.** Chamberlain, T.C., and Salisbury, R.D., Geology. Vol. I-Geologic Processes and Their results., Holt and Co., 654pp. (Fair to Poor).

- 1905.** Fairbanks, H.W., Practical Physiography (with 900 colored maps and three hundred ninety four illustrations, Allyn and Bacon, Publishers, Boston and Chicago., 542pp.(Good to Very Good).
- 1907.** Salisbury, R.D., Physiography., Henry Holt and Company, NY., 770pp.(Good).
- 1907.** Chamberlain, R.T., and Salisbury, R. D., Geology., Vol. II Earth History., 2nd Ed., Revised., Holt and Co., 692pp. (Fair to Poor).
- 1908.** Davis, W.,M., Practical Exercises in Physical Geography. Ginn and Company, Boston, MA. 148pp. (Good).
- 1909.** Chamberlain, T.C. and Salisbury, R.D., A College Textbook of Geology., Henry Holt and Company, New York, NY., 978pp. (Fair).
- 1915.** Pierson, L.V., and Schuchert, C. A Text-Book of Geology., Wiley & Sons. 1051pp.
- 1920.** Pierson, L.V., and Schuchert., C.. A Textbook of Geology: Part One Physical Geology, 2nd edition-revised, Wiley and Sons Inc., 471pp.(Fair to Good).
- 1924.** Alfred Wegener. The Origin of Continents and Oceans. Translated from the 3rd German Edition, with introduction by J. W. Evans, E.P.H. Dutton and Company, Publishers. Great Britain, 212pp. (Fair).
- 1925.** Johnson,D. The New England-Acadian Shoreline. Wiley and sons., NY.,608pp. (Good).
- 1926.** Daly, R.A.. Our Mobile earth. Charles Scribner's Sons, NY., 342pp.
- 1928.** W.A. J.M. Van Waterschoot Van Der Graucht et al. A Symposium on the Origin and Movement of Land Masses both Inter-Continental and Intra-Continental, as Proposed by Alfred Wegener., Amer. Assn. Petroleum Geologists, Tulsa, OK., 240pp. (Good).
- 1929.** Cleland, H.F.. Geology: Physical and Historical. Amer. Book Company, NY., 718pp. (Good)
- 1929.** Gieke. A.,(Sir). Text-Book of Geology. 3rd edition., P.F. Collier and Sons., NY., 503pp. (Fair).
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***ANNOUNCEMENT & INVITATION TO PARTICIPATE***  
***Pacific Section SEPM (Society for Sedimentary Geology)***  
***Field Trip on Hawaii and Kauai***  
***August 2 – 8, 2015***

**SEDIMENTS OF A MID-PLATE VOLCANIC ISLAND COMPLEX:  
A Field Investigative Trip on the Islands of Hawaii and Kauai**

Trip Organizers and Leaders:

Chuck Siemers-Blay, TEOK Investigations, Poipu, Kauai, Hawaii; [teok@aloha.net](mailto:teok@aloha.net)

Mario V. Caputo, Department of Geological Sciences, San Diego State University; [mvcaputo@earthlink.net](mailto:mvcaputo@earthlink.net)



**Sediments of a Mid-Plate Volcanic Island Complex:  
A Field Investigative Trip on the Islands of Hawaii and Kauai  
Pacific Section SEPM (Society for Sedimentary Geology)  
Sunday to Saturday, August 2-8, 2015**

**Trip Organizers and Leaders:**

*Chuck Siemers-Blay, TEOK Investigations, Poipu, Kauai, Hawaii*

*Mario V. Caputo, Department of Geological Sciences, San Diego State University*

**Field Trip Theme:**

Natural history of select sedimentary deposits of the Hawaiian archipelago emphasizing five million years of geological evolution from the Big Island of Hawaii to the island of Kauai. Among the sedimentologic features showcased are: the mountain plateau glacial deposits of Mauna Kea, and the genesis of Hawaiian beach and coastal eolian dune deposits derived from both terrestrial volcanogenic and marine biogenic sources.

**Field trip registration fee – \$980.00\***, which includes: 6 nights lodging on the islands of Hawaii and Kauai, field lunches for 5 days, ground transportation for 5 days, guidebook, first-night reception dinner, last-night Hawaiian-style dinner, and a 3-year professional or student membership in the Pacific Section SEPM. Please complete all forms: Registration, PS-SEPM membership, and signed Release and Indemnity Agreement.

*\* also includes a reservation fee of \$250, which is non-refundable should a participant cancel his or her registration after the May 15, 2015 deadline. The total \$980 registration fee will be refunded should the field trip be cancelled.*

✦ **RESERVATIONS** for a roundtrip flight to Hilo, Hawaii from the mainland and back to the mainland from Lihue, Kauai, plus an inter-island flight from Hilo to Lihue should be made **BEFORE May 31, 2015.**

✦ **PLEASE NOTE** that all airfares ARE SEPARATE, additional costs, and are not included in the field trip registration fee.

☺ **STUDENTS**, please contact Mario Caputo directly (909-579-0573 or [mvcaputo@earthlink.net](mailto:mvcaputo@earthlink.net)) about financial support to partly defray field trip expenses.

↔ For further information and for those folks desiring rooms for single occupancy or rooms for more than 2 people should contact Chuck Siemers-Blay directly (808-742-8305 or [teok@aloha.net](mailto:teok@aloha.net)).

**REGISTRATION DEADLINE: May 15, 2015**

**Field Trip Limit: 27 participants** (not including field trip leaders and video producer)

Pay only by check made payable to TEOK Investigations, send payment, Registration Form, signed Release and Indemnity Agreement, and completed Membership Form to:

<p><b>Chuck Siemers-Blay TEOK Investigations 5162 Lawai Road (PO Box 549) Koloa, Kauai, HI 96756</b></p>
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# RESERVATION & REGISTRATION FORM

## Sediments of a Mid-Plate Volcanic Island Complex: A Field Investigative Trip on the Islands of Hawaii and Kauai

Pacific Section SEPM (Society for Sedimentary Geology)  
Sunday to Saturday, August 2-8, 2015

### Trip Organizers/Leaders:

Chuck Siemers-Blay, TEOK Investigations, Poipu, Kauai, Hawaii  
Mario V. Caputo, Department of Geological Sciences, San Diego State University

## RESERVATION & REGISTRATION DEADLINE: May 15, 2015

### FIELD TRIP LIMIT: 27 Participants (Not including field trip leaders and video producer)

Each field trip participant should complete and return this Reservation & Registration Form along with a signed Release and Indemnity Agreement that follows on the next page.

Name: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

Telephone #: \_\_\_\_\_ E-mail address: \_\_\_\_\_

Please note any DIETARY RESTRICTIONS (allergies, vegetarian, vegan, etc.) \_\_\_\_\_

**GENERAL REGISTRATION FEE:** \$980 \_\_\_\_\_ (✓)\*

(includes 6 nights lodging, field lunches, ground transportation, guidebook, first-night reception dinner, last-night Hawaiian-style dinner, and a 3-year professional or student membership in the Pacific Section SEPM)

\* includes a reservation fee of \$250, which is non-refundable should a participant cancel his or her registration after the May 15, 2015 deadline. The total \$980 registration fee will be refunded should the field trip be cancelled.

✈ **Airfares to and between the islands are separate, additional costs.**

✈ **MAKE FLIGHT RESERVATIONS BEFORE May 31, 2015.**

☺ **STUDENTS, please contact Mario Caputo directly (909-579-0573 or [mvcaputo@earthlink.net](mailto:mvcaputo@earthlink.net)) about financial support to partly registration expenses.**

↔ **Those folks desiring rooms for single occupancy or rooms for more than 2 people should make arrangements with Chuck Siemers-Blay directly (808-742-8305 or [teok@aloha.net](mailto:teok@aloha.net)).**

**Pay only by check made payable to TEOK Investigations. Send payment and all forms: Registration, PS-SEPM Membership, and signed Release and Indemnity Agreement to:**

Chuck Siemers-Blay  
TEOK Investigations  
5162 Lawai Road (PO Box 549)  
Koloa, Kauai, HI 96756

**KEEP A COPY FOR YOUR RECORDS**



PACIFIC SECTION

Pacific Section SEPM
(Society for Sedimentary Geology)
Field Trip August, 2015

RELEASE AND INDEMNITY AGREEMENT

In consideration of the receipt of permission by the Registrant from the Pacific Section, Society for Sedimentary Geology (PS-SEPM) to register for and participate in the PS-SEPM 2015 Field Trip to be conducted August 2 - 8, 2015 and entitled "Sediments of a Mid-Plate Volcanic Island Complex: A Field Investigative Trip on the Islands of Hawaii and Kauai", the Registrant hereby releases and will indemnify, defend, and hold harmless the Pacific Section SEPM (Society for Sedimentary Geology, and the agents, officers, servants, and employees thereof, and those persons in charge of and conducting any of the field trip activities, including without limitation the leader or leaders of the Field Trip (hereafter referred to as "Indemnitee" or "Indemnitees") of and from any and all liabilities, claims, demands, actions, and causes of action whatsoever arising out of or relating to any loss, damage, or injury, including death, as may be sustained by the Registrant, and to any loss, damage, or injury to any property of the Registrant's, while involved in any way with the Field Trip, including without limitation any exhibition component thereof or any of the adjunct activities.

The Registrant is fully aware that the Field Trip may involve hazardous and/or dangerous activities and/or being in or around hazardous conditions and recognizes and accepts the risks, known and unknown, involved on the Field Trip, including without limitation those involved in traveling to and from the site or sites of the Field Trip (whether by air, water, or land transportation) and at and during all stops and layovers during the Field Trip. The provisions of this paragraph shall in no way serve to limit or restrict the Registrant's release and indemnity of PS-SEPM and those persons in charge of and/or conducting any of the Field Trip activities.

This release and indemnity includes without limitation liabilities, claims, demands, actions, and causes of action to or by third parties as well as to or by the Registrant. This release and indemnity includes without limitation liabilities, claims, demands, actions and causes of action arising out of or relating to any loss, damage, or injury caused in any way by the concurrent or contributory negligence of any Indemnitee. This release and indemnity includes without limitation liabilities, claims, demands, actions and causes of action arising out of or relating to any loss, damage, or injury caused in any way by the sole negligence of any Indemnitee. Having made all inquiries deemed by the Registrant to be appropriate, the Registrant hereby voluntarily assumes all risks of loss, damage, or injury, including death, as may be sustained by the Registrant or any property of the Registrant while involved in any way with this Field Trip.

In the event the release by the Registrant of any Indemnitee of any liability, claim, demand, action, or cause of action described herein is determined to be invalid or unenforceable, the Registrant agrees that his or her total recovery of damages from the Indemnitees, or any of them, both actual and punitive, shall be limited to the cost of the registration for the Field Trip and the costs of tuition or other charges paid by the Registrant for the Registrant's participation in any of the Field Trip and adjunct activities.

In the event any provision of this Release and Indemnity Agreement is determined to be invalid or unenforceable, all other provisions hereof shall continue to be enforceable and shall be interpreted as though said invalid provision had never been contained herein. The provisions of this Release and Indemnity Agreement shall be binding upon the Registrant's heirs, next of kin, executors, administrators, and personal representatives.

This Release and Indemnity Agreement shall be governed by and construed and enforced in accordance with the laws of the State of California, United States of America (without regard to any conflict of laws and principles). All actions, suits and proceedings arising out of or in connection with this Release and Indemnity Agreement shall be brought to the District Court of California, United States of America, which shall be the exclusive forum therefore. The Registrant hereby irrevocably submits, in person, to the jurisdiction and process of the District Court of California, United States of America.

By consenting to the terms of this Release and Indemnity Agreement with a signature, the Registrant acknowledges that:

- 1. He or she has read and understands the above terms of this Release and Indemnity Agreement, and agrees to them voluntarily.
2. He or she is allowed to register for and participate in the Field Trip and any adjunct activities.
3. Consenting to the terms of this document is essential to allowing Registrant to register for and participate in this Field Trip and any adjunct activities.

Print Name \_\_\_\_\_

Signed \_\_\_\_\_ Dated: \_\_\_\_\_

Send to Chuck Siemers-Blay with Registration and PS-SEPM Membership Forms

**Pacific Section – SEPM (Society for Sedimentary Geology)**  
**Membership Form to fill-out as part of registration for Hawaii Field Trip**

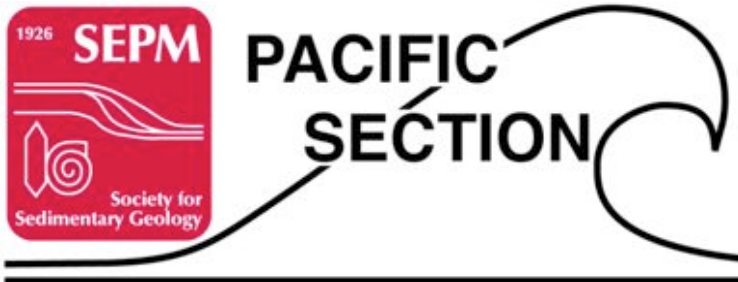
CHECK ONE (✓): Renewed Membership  New Membership

Individual		
Last Name	First Name	Middle Initial
Company or Corporation		
Business Name:		

Preferred Mailing Address: <i>Business or Home - PLEASE COMPLETE ONLY ONE</i>			
<b>Business Address</b>	Name of Business or Teaching Institution		
	Street or P. O. Box #		
	City	State	Postal Code
<b>Home Address</b>	Street or P. O. Box #		
	City	State	Postal Code

Telephone & Email	
Business	
Home	
Cell	
Email Address	

Highest Degree Earned	
Year Earned	
Institution	
Specialization	



Send this completed form to:

Wayne Henderson  
 Department of Geological Sciences  
 California State University, Fullerton  
 P. O. Box 6850  
 Fullerton, CA 92834-6850

**Send to Chuck Siemers-Blay with Registration Form and Release & Indemnity Agreement**

**KEEP A COPY OF THIS FORM FOR YOUR RECORDS**

## PACKING RECOMMENDATIONS

- pack light; 1 check-in bag maximum; there will be time and facilities in Poipu, Kauai for laundry needs
- shorts and T-shirts for field stops along coasts of the islands of Hawaii and Kauai
- long pants and layered tops for the drive to Mauna Kea summit; air temperature will decrease progressively during the ascent and vice versa
- light-weight rain jacket/wind breaker
- sun glasses
- hat
- ~\$500 cash
- sturdy, closed-toe hiking trail shoes or boots; no sandals, running shoes, or tennis shoes
- personal identification & health insurance cards
- field notebook & writing tools
- cameras
- rock hammers & sample bags, if desired, packed in check-in luggage
- laptops, if desired
- day packs
- lip balm, sun screen, & other sundry items when traveling

## SCHEDULE OF ACTIVITIES

### *Travel & Arrival Day - Sunday, August 2, 2015*

#### **Travel Day From Home Departure Point to the Hawaiian Islands**

- ➔ One day of travel from mainland United States to Hilo on the island of Hawaii; transportation from Hilo International Airport to Dolphin Bay Hotel provided.
- ↔ Lodging in Hilo at Dolphin Bay Hotel; occupancy: 2 and up to 6 people with advance notice
- 🎯 “Meet and Greet” & Reception dinner in downtown Hilo within walking distance of hotel.

### *Field Trip Day 1 - Monday, August 3, 2015*

- 🕒 6:00-6:30 a.m. Suggested reveille. Hotel continental breakfast or downtown Hilo coffee shops (e.g. Bear’s Coffee) within walking distance of hotel open for breakfast at 7:00 a.m.
- 🕒 7:45 a.m. assembly in hotel front entrance
- 🕒 8:15 a.m. departure in vans. Take-along lunches of meat or vegetarian sandwiches, fruit, granola bars, and beverages

#### **Morning Field Activities:**

##### **Stop 1a: Volcano National Park – the ultimate source of island volcanogenic sediment**

- ◆ visitor center; view a 30-minute video (9:00-9:30); overview of island geology (3-D island model)
- ◆ Observation of Kilauea Volcano at rim of summit caldera

#### **Late Morning-Early Afternoon Field Activities:**

##### **Stop 1b: Punalu’u Beach – black volcanogenic (hyaloclastic) sand**

- ◆ lunch stop
- ◆ more “mature” hyaloclastic black sand beach generated by prehistoric (~2,000 yrs bp) from Mauna Loa volcanic cone

#### **Afternoon Field Activities:**

##### **Stop 1c: Papakolea Green Sand Beach at South Point – southern-most latitude location of the United States**

- ◆ gentle 5-mile roundtrip hike to Mahana Cinder Cone and Papakolea Green (Olivine) Sand Beach

##### **Optional Stop 1d: Kalapana-Kaimu Beach – black volcanogenic (hyaloclastic) sand**

- ◆ “recent” black sand beach generated by 1990 lava flow from Kilauea volcanic cone

- 🕒 End of Field Day 1. Return to Hilo & lodging at Dolphin Bay Hotel. Participants are on their own for dining and other activities.

- 🎯 Multiple dining options and grocery store (Sack ‘n’ Save) for personal supplies in downtown Hilo within walking distance of hotel.



## *Field Trip Day 2 - Tuesday, August 4, 2015*

- 🕒 6:00 a.m. Suggested reveille
- 🕒 6:30 a.m. Hotel continental breakfast or breakfast at Bear's Coffee
- 🚐 7:15 a.m. departure in vans. Take-along lunches of meat or vegetarian sandwiches, fruit, granola bars, and beverages. Travel eastward on Route 200 on "saddle road" between Mauna Loa shield cone on the left (south) and Mauna Kea shield cone on the right (north). Views to the left (south) of basaltic lavas from Mauna Loa that flowed mid- to late-1800s and mid-1900s.

### **Morning Field Activities:**

#### **Stop 2a: Mauna Kea State Park**

rest stop/overview of Mauna Kea Volcano/glacial deposits

#### **Stop 2b: Mauna Kea Visitors Center**

rest stop/ change into warmer clothing for cooler Mauna Kea summit at 13,796 feet elevation

- 🚐 Road ascent to Mauna Kea summit with views of barren post-shield volcanic rock (cinder cones and aa flows) and evidence of glaciation.

#### **Stop 2c: Mauna Kea summit - astronomy observatories**

#### **Stop 2d: Pleistocene glacial features in a volcanic terrane**

- ◆ end-terminal-ground moraines, roches moutonnée, outwash braidplain, glacial sculpting of volcanic landscape

#### **Stop 2e: Mauna Kea Visitor Center**

- ◆ lunch
- ◆ change into cooler clothing for descent to the Kona coast

### **Afternoon Field Activities:**

#### **Stop 2f: Kekaha Kai State Park - nature and distribution of volcanogenic and biogenic beach and eolian sand**

- ◆ basaltic flow features: lava tubes & collapse, lavacicles, pahoehoe and aa textures
- ◆ storm-wave tossed volcanic sand & coral-reef clasts at Makolea Beach; mixed biogenic-volcanogenic sand at Kaelelehuluhulu Beach and carbonate sand at Makalawena Beach.

- 🚐 End of Field Trip Day 2. Return to Hilo via Waimea Town; lodging Dolphin Bay Hotel. Participants are on their own for other activities.

## Field Trip Day 3 - Wednesday, August 5, 2015

### Morning Travel and Settling-in on Kauai :

- 🕒 6:30 a.m. Suggested reveille
- 🕒 7:00 a.m. Suggested breakfast at Bear's Coffee
- ➔ Morning inter-island flight on Hawaiian Airlines (see recommended flights in table below) from Hilo International Airport on the island of Hawaii, with connecting flight in Honolulu on the island of Oahu, to Lihue Airport on the southeast side of the island of Kauai. Transportation provided from Dolphin Bay Hotel to Hilo Airport, and from Lihue Airport to Waikomo Stream Villas (condominiums) at Poipu, Kauai.

### Table of Inter-island Flights on Hawaiian Airlines as of February, 2015.

*If possible, it would be desirable if field trip participants could all fly into Lihue Airport on either Flights 121 or 341 (shaded and in bold in table below), both of which arrive at 11:41 a.m. In this way, trip leaders can shuttle people and luggage to Poipu lodging on Kauai all at the same time. It will further allow everyone to settle in their new accommodations and have lunch by 2:00 p.m. Other flight options are shown in the table below should flights 121 and 341 be full and unavailable.*

#### Hawaiian Airlines

Departing Flight #	Route	Departure/Arrival Times	Connecting Flight #	Route	Departure-Arrival Times
<b>121</b>	<b>Hilo to Honolulu</b>	<b>8:46/9:36</b>	<b>143</b>	<b>Honolulu to Lihue</b>	<b>11:03/11:41</b>
121	Hilo to Honolulu	8:46/9:36	343	Honolulu to Lihue	12:29/1:08
<b>341</b>	<b>Hilo to Honolulu</b>	<b>9:25/10:16</b>	<b>143</b>	<b>Honolulu to Lihue</b>	<b>11:03/11:41</b>
341	Hilo to Honolulu	9:25/10:16	343	Honolulu to Lihue	12:29/1:08
151	Hilo to Honolulu	10:21/11:12	343	Honolulu to Lihue	12:29/1:08

- ➔ Lodging in Poipu at Waikomo Stream Villas; occupancy: 2 and up to 6 people with advance notice.

### Afternoon Indoor Sessions

- 🕒 2:00 p.m. Lectures and Discussions at the residence of Chuck Siemers-Blay and Jana Blay. Beverages and snacks provided. Bring field guide, notebook, and writing tools.
  - ◆ geologic overview of the Hawaiian Islands with emphasis on the islands of Hawaii and Kauai
  - ◆ recap of last two days on the island of Hawaii and geologic overview of the island of Kauai with preview of sedimentologic settings of field stops to be visited
  - ◆ beaches and sediment on Kauai
  - ◆ lithostratigraphy of eolian calcarenites on Kauai
  - ◆ eolian sedimentation and architecture of Quaternary eolian calcarenites, Hawaii and Bahamas, and some Phanerozoic eolian quartzarenites compared
- 🕒 End of Field Trip Day 3. Multiple dinner options at Poipu Village and Kukui'ula Shopping Village in Poipu within walking distance of Waikomo Stream Villas.

## *Field Trip Day 4 - Thursday, August 6, 2015*

- ⌚ 6:30 a.m. Suggested reveille
- 📍 7:00 a.m. Breakfast either in condos, or at Poipu Village and Kukui'ula Shopping Village in Poipu within walking distance of Waikomo Stream Villas.
- 🚐 8:00 a.m. Depart in vans from Waikomo Stream Villas. Take-along lunches of meat or vegetarian sandwiches, fruit, granola bars, and beverages. Travel westward along the southwestern edge of Kauai to the town of Waimea.

### **Morning Field Activities:**

#### **Stop 4a: Mouth of Waimea River – the coastal sedimentary setting**

- ◆ fluvial-transported volcanoclastic beach sand
- ◆ coastal sedimentary dynamics: beach slope, wave swash, barrier spit at mouth of river

#### **Stop 4b: Waimea River sand bar and exposure of island lava rock**

#### **Stops 4c & 4d: Kikiaola Harbor – human impact on coastal sedimentary processes- a classic case study**

- ◆ effects of “hard” coastal engineering designs on nature and distribution of beach sediment updrift and downdrift of Kikiaola Harbor

- 🚐 Travel north and ascend along Kauai Route 550, Waimea Canyon Road, to Waimea Canyon State Park

#### **Stop 4e: Waimea Canyon Road – outcrops of weathered lava rock**

- ◆ extrusive and intrusive volcanic rock bodies
- ◆ weathering intensity of Hawaiian lava rock

#### **Stop 4f: Pu'uhinahina Lookout (elev. 3,619 ft)**

- ◆ Waimea Canyon – effects of erosion by Waimea River, weathering, and slope-retreat
- ◆ unraveling the volcanic history of Waimea canyon-a tale of shield cone eruptions
- ◆ **Lunch** at Kokee State Park

### **Afternoon Field Activities:**

#### **Stop 4g: Kehaha Beach Park – carbonate sandy beach**

- ◆ beach sand composition
- ◆ prologue to Stop 4h: sedimentary architecture of a foreshore and backshore beach (trenching)

#### **Stop 4h: “Wildlife Sanctuary” – Evidence for a prograding coastal plain?**

- ◆ a partial upward-fining, upward-shallowing regressive stratigraphic succession?

#### **Stop 4i: Polihale State Park and Beach**

- ◆ extensive carbonate sand beach and vegetated eolian dunes

- 🚐 End of Field Trip Day 4. Return to Poipu and the Waikomo Stream Villas for resting and refreshing.
- 📍 Multiple dinner options at Poipu Village and Kukui'ula Shopping Village in Poipu within walking distance of Waikomo Stream Villas.

## *Field Trip Day 5 - Friday, August 7, 2015*

- ⌚ 6:30 a.m. Suggested reveille
- 🏠 7:00 a.m. Breakfast either in condos, or at Poipu Village and Kukui'ula Shopping Village in Poipu within walking distance of Waikomo Stream Villas.
- 🚌 8:00 a.m. Depart in vans from Waikomo Stream Villas. Take-along lunches of meat or vegetarian sandwiches, fruit, granola bars, and beverages. Travel eastward to Keoniloa Bay and Shipwreck Beach.

🦋 **Field trip theme for the day: Quaternary carbonate eolianites, super bounding surfaces and paleosols, and modern eolian carbonate dunes**

### **Stop 5a: Makawehi Point via Keoniloa Bay and Shipwreck Beach**

- ◆ Makawehi Member of the Mahaulepu Formation

### **Stop 5b: Punahoa Point**

- ◆ Paoo Member of the Mahaulepu Formation separated by paleosol from the oldest eolianite on Kauai, the Punahoa Member of the Mahaulepu Formation

### **Stop 5c: Kawailoa Bay**

- ◆ Lunch

### **Stop 5d: Mahaulepu Beach**

- ◆ atypical modern carbonate sand bodies of eolian origin

### **Stop 5e: Paoo Point**

- ◆ sedimentary architecture of the Paoo Member of the Mahaulepu Formation

### **Stop 5f: "Makauwahi Sinkhole"**

- ◆ post-sinkhole sedimentary fill; paleoecologic/biogeographic history

⊖ End of field trip.

- 🏠 Hawaiian-style dinner at the residence of Chuck Siemers-Blay and Jana Rothenberg in Poipu

## *Departure Day - Saturday, August 8, 2015*

- ➔ Travel or remain on Kauai for an extended stay. Transportation from Waikomo Stream Villas to Lihue Airport provided. Depart Kauai via inter-island flight (e.g. Hawaiian Airlines) for a connecting flight to the mainland or other destinations at either Honolulu International Airport on the island of Oahu or Hilo International Airport on the island of Hawaii.

*Mahalo, alo'ha, a he maika'i ka'ahale!  
(Thank you, good-bye, and have a good journey!)*