

SAN DIEGO ASSOCIATION OF GEOLOGISTS

www.sandiegogeologists.org

SDAG MEETING ANNOUNCEMENT

WEDNESDAY, APRIL 20, 2016

Evolution of Pelagic Fish Production Across the
Oligocene/Eocene Boundary

Presented by:
Michelle Zill

AND

The San Diego-Tijuana Earthquake Planning Scenario Update:
THE Design Earthquake

Presented by:
Diane Murbach

Where: The Alamo Mexican Café
2543 Congress Street
San Diego, CA 92110
(See Map)

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

Directions: FROM INTERSTATE 5: Take the OLD TOWN AVENUE exit. Proceed east on Old Town Avenue. Turn left on to San Diego Avenue and then left at the fork onto Congress Street. The restaurant is located approximately three blocks to the north on the left (west) side of the street.

FROM INTERSTATE 15: Take CA 163 south to Mission Valley and then take Interstate 8 west. Take the Taylor Street/Hotel Circle exit and head west on Taylor Street. Turn left (south) onto Congress Street. The restaurant is located approximately three blocks to the south on the right (west) side of the street.

Dinner: Mexican Buffet and Cash bar

Cost: \$25 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 **no later than noon, Monday April 18th.** Reservations cannot be guaranteed after Monday at noon; but are always preferred over walk ins. Reservations well before the deadline are MUCH appreciated.

Map:



ABSTRACTS AND BIOS

Evolution of Pelagic Fish Production Across the Oligocene/Eocene Boundary

Presented by: **Michelle Zill**

The Eocene-Oligocene Transition (EOT, 38-28 Ma) was a period of global cooling and increased nutrient delivery to the ocean. It is associated with the onset of permanent ice sheet on Antarctica, and the beginning of a highly productive polar ecosystem, dominated by diatoms and favoring short, efficient food chains. In a highly efficient, large phytoplankton-dominated ecosystem, we would expect to see higher abundances of consumers, as fewer trophic steps means more carbon available to upper trophic level groups. Here we use the accumulation rate of ichthyoliths (fish teeth and dermal scales) to measure the relative export production of fish through this time period of changing climate. Records from the South Atlantic gyre (DSDP Site 522) the South Pacific Gyre (DSDP Site 596) and the Southern Ocean (DSDP Site 689) show a 50% reduction in ichthyolith accumulation rate in the vicinity the Eocene Oligocene boundary. However, this drop in fish production occurs just after the E/O in the Atlantic, 4 million years before the E/O in the Pacific and 6 million years prior to the E/O in the Southern Ocean. Since the EOT is generally associated with an increase in productivity and diatom blooms in the Southern Ocean and tropical Pacific, we would expect that the abundance of fish would increase across the transition. Our results are surprisingly the inverse of this expectation, and suggest that the transition from greenhouse to icehouse did not produce increase in forage fish or even a response of any kind during the climatological transition into the icehouse world. Indeed, it seems that ichthyolith accumulation rate and primary productivity are not perfectly linked, and it may be that ichthyolith accumulation is responding more to another factor, such as ocean temperature or prey availability that is not linked to the increased diatom production during the EOT.

SPEAKER BIO - Michelle Zill

Michelle Zill currently attending Scripps Institution of Oceanography at UCSD, where she is a Master's of Science candidate studying Earth Science (Paleoceanography). Michelle previously received a B.S. in Earth Sciences with a minor in Marine Sciences also from UCSD.

Michelle grew up in the SF Bay Area. She gained her interest in marine science as a volunteer and summer intern at the Monterey Bay Aquarium.

Her interest in paleontology began while taking a paleobiology class from Dr. Richard Norris at UCSD. She began volunteering in Norris's paleobiology lab supporting a variety research projects, including the investigation of an ancient palm forest and determining fish productivity during Ocean Anoxic Event Two (OAE2). This led to Michelle conducting her own research to understanding of fish productivity during the Eocene-Oligocene Transition.

She is planning to continue her research through pursuit of a Ph.D. commencing in the fall of 2016.

The San Diego-Tijuana Earthquake Planning Scenario Update: THE *Design Earthquake*

Presented by: **Diane Murbach**

The first Earthquake Planning Scenario for San Diego was published in 1990 titled “*Planning Scenario for a Major Earthquake, San Diego-Tijuana Metropolitan Area*,” prepared by the California Geological Survey (CGS) as Special Publication 100. This scenario included the San Diego and Tijuana metropolitan areas, and was designed for International planning where significant earthquake damage could occur on both sides of the border. This scenario was published 26 years ago when there were no “Active” faults as defined by the State within the City of San Diego. By 1991 the State had enough data to map the first “Active” fault zones in San Diego. Over the last 26 years significant research has changed the knowledge of fault locations, history, and the potential for earthquake hazards in the region. Hence, the importance of needing to update the 1990 scenario.

Today, more than 5 million people live in this integrated cross-border region with interdependent infrastructure and economies. An updated scenario will assist engineers, architects, building owners, emergency managers, government agencies, and elected officials to plan for response to a realistic earthquake in the San Diego-Tijuana region. The scenario will serve as a basis for reducing earthquake risks and improving community disaster resilience, because both sides of the border would learn what they could change now.

Diane will provide the results from the last year of on-going work by the Earth Science group, which includes the selected design earthquake, the USGS ShakeMaps and PAGER. Diane will discuss the work that needs to be prepared to plan for the earthquakes secondary hazards.

How do you get involved? The local San Diego Chapter Earthquake Engineering Research Institute (EERI) initiated the update to this earthquake scenario. This project has volunteer engineers, scientists, researchers, architects, geologists, seismologists, emergency managers, planners, building officials, social scientists and economists working together, all from both sides of the border. These volunteers are organized into three interconnected working groups that will yield a final scenario report; Earth Science, Engineering and Social Science. The final product of this effort is envisioned to be a report that describes the scenario earthquake, ground failure, possible effects on lifeline structures, transportation facilities, buildings and critical facilities, economic impacts and provides policy recommendations for the region. You can review the information and resources on the web page: http://sandiego.eeri.org/?page_id=265 *How do you get involved?* Send an email to the [EERI San Diego Chapter](#).

SPEAKER BIO – Diane Murbach

Diane Murbach is a Certified Engineering Geologist (CEG) with 35 years of experience in Oregon, Washington and California. She provides geotechnical and land use consulting services for Murbach Geotech. Diane received a B.S. from Eastern Washington University and an M.S. from San Diego State University in Geology. She is the 1990 past President for the San Diego Association of Geologists (SDAG), the 1994 past President for the South Coast Geological Society (SCGS), and services as the Secretary of the Board of Directors for the San Diego Geological Society (SDGS). Diane’s background with earthquakes includes conducting a

research project that investigated structures damaged by direct fault displacement from the Landers 1992 earthquake awarded by the Earthquake Engineering Research Institute (EERI), and being part of the reconnaissance teams for the 1994 Northridge earthquake and the 2010 Easter earthquake in Baja, Mexico.

UPCOMING MEETINGS

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.

May 18, 2016	Markus Johnson - Gulf of California Coastal Ecology: Insights from the Present and Patterns from the Past
June 8, 2016	Joint Meeting with South Coast Geological Society: Jeff Keaton - Oso Landslide: An Overview of the Geotechnical Extreme Events Reconnaissance (GEER) Response
July 13, 2016	Steve Borron - Predicting Slope Failures Using Slope-Monitoring Radar

2016 SDAG EXECUTIVE COMMITTEE

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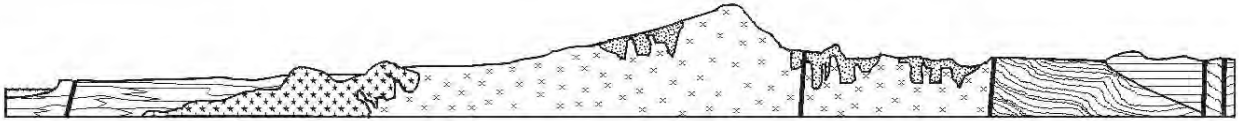
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llindsay@sunbeltpub.com

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Please type or print clearly.

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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 \$ _____

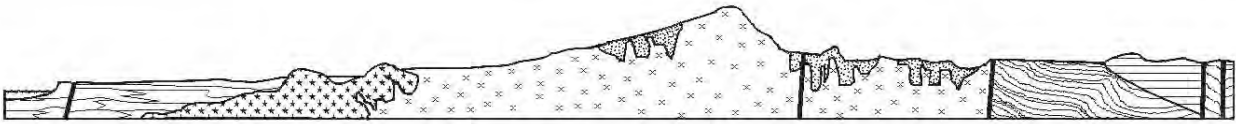
☐ New/Returning Member ☐ Continuing Member

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San Diego Association of Geologists (SDAG)

3130 N Evergreen Street

San Diego, CA 92110



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Website: _____

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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 11/18/2015

ANNOUNCEMENTS

CALL FOR PAPERS

GEOHAZARDS OF NORTHERN BAJA CALIFORNIA

Evaluating the Effects of Geologic Hazards on the Local Landscape

SDAG 2016 Field Trip – October 21th through 23th

On this field trip, we will travel south of the US-Mexico border to examine the geomorphic features related to faulting, landsliding and other erosional and mass wasting processes. If possible, we will also examine fault related features on a smaller scale in trench exposures. In addition, depending on the outcome of this year's highly anticipated El Niño, we may be able to examine the effects of the heavy rains on the local landscape. Where possible, we will look at how geotechnical engineering solutions have been employed to stabilize the local landscape.



SDAG seeks new manuscripts based on original work relating to earthquakes, faulting, landsliding, and/or any other geologic hazards that may affect Northern Baja. We also invite authors to submit articles on a broader range of topics including regional geology, structural geology, hydrogeology and groundwater resources.

Deadline for Abstracts: Friday, May 20th, 2016

Please submit the following information along with abstracts:

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

Please submit abstracts by email to Rupert Adams at adams@geoconinc.com



"ROCK DONATIONS NEEDED:"

Amy Romano, one of our former student members, is looking for rock donations. Amy is currently attending Humboldt State University and majoring in Geology. She is very involved with Humboldt's Geology Club, and every year the club holds a rock auction to support their activities. If you have any rocks to donate, please contact Amy at ajr612@humboldt.edu.

CALL FOR ARTICLES

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.

SDAG RESEARCH TOOL

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, from Coast to Cactus in 2014, and finally over the edge to the Coyote Mountains in 2015. 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_chronological.pdf

The SDSU Department of Geological Sciences' Annual Banquet will be held on Friday, April 22, at the Hilton San Diego Mission Valley. A successful petroleum geologist, Dr. John Robinson, and his wife, Diane, along with retired SDSU Chemistry professor, Dr. Vince Landis, will be this year's deserving recipients of the Baylor Brooks Honored Alumni Award. More info is included on the attached flyer. Please make your reservations by April 15.



The 2016 GSA Annual Meeting will be September 25 - 28, 2016
in Denver, Colorado

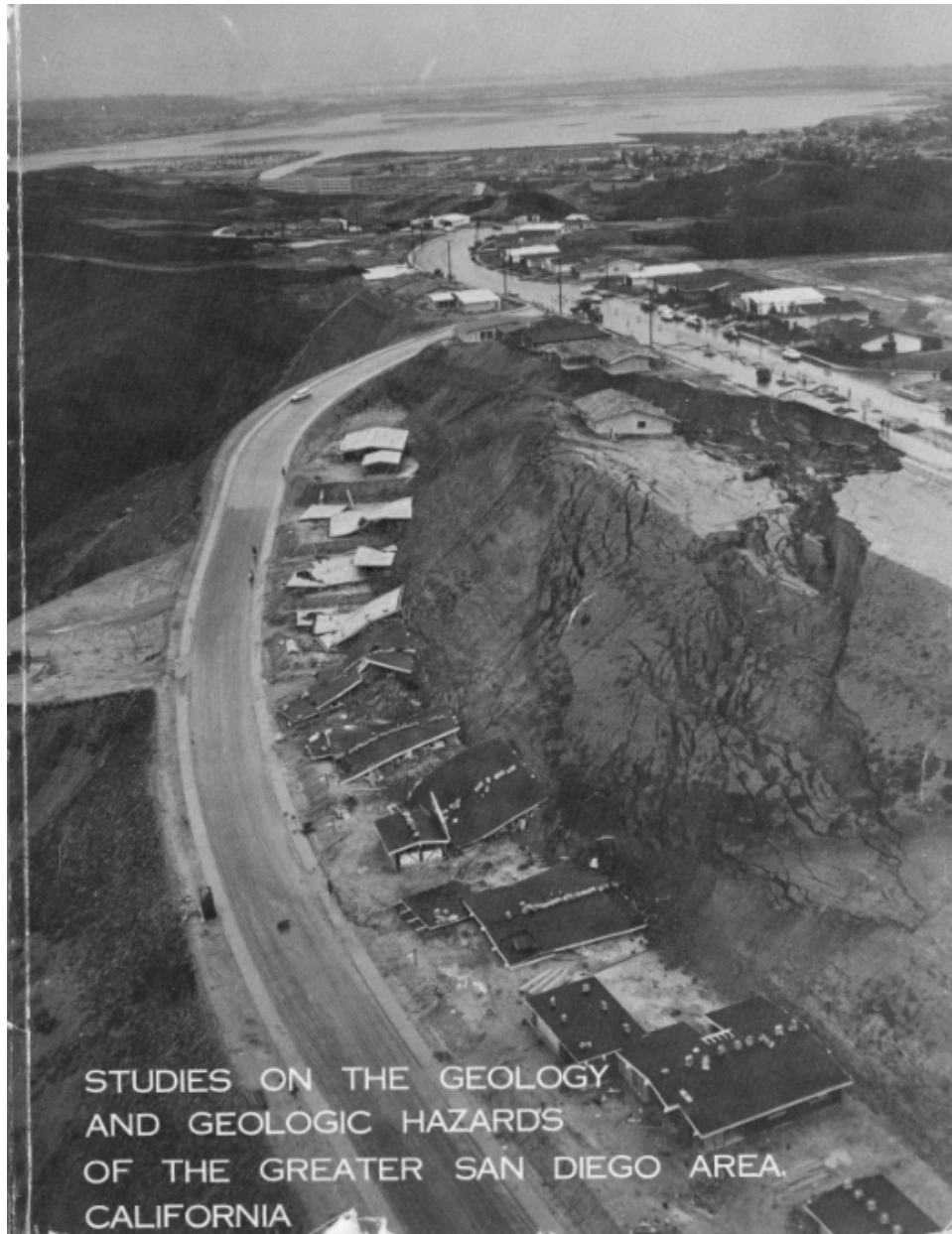
The SIPES (Society of Independent Professional Earth Scientists) is planning their annual conference in San Diego on August 1-4, 2016 at the Omni Resort and are looking for people to give presentations and for potential field trip stops that represent the local geology of any type, so the scope of the presentations and field trip is fairly open. The SIPES is a national group, consisting mostly of independent geoscientists. Their website is <https://sipes.org>. Speaker presentations will take place on August 2 & 3 and the field trip is set for the 4th. Any person giving a presentation receives free registration to attend all functions, and can join the networking group for free. The presentations should be approximately 25 minutes in length and have a PowerPoint presentation, if possible. They find the applicability and interest in most geological and geophysical parameters to be appropriate for the conference. However, diversity is greatly sought as well.

They are also looking for a Foundation Speaker to give a 2-hour talk on the local geology (or some aspect of it) and will provide a \$1,000 donation or payment for the Foundation Speaker.

If you are interested in giving a talk, attending the conference or have any questions you can contact Kirk Kolar at kckoil100@gmail.com. If you have a presentation you'd like to give please submit a short abstract and a very brief bio to be listed in the conference brochure to Kirk.

SDAG MONTHLY PHOTO COMPETITION

This month's photo submittal comes from an oldie but goodie. The photo is from the cover page of SDAG's and the Association of Engineering Geologist's field guidebook circa 1973, edited by Arnold Ross and Robert J. Dowlen. This is a reminder of the importance of our work as professionals across all fields related to potential hazards. Not sure if you have read this publication, check out the SDAG website to find a list of publications and a few publications that can be downloaded. Submit your photo via email to the SDAG secretary for entry.



GEOLOGY JOB OPPORTUNITIES

Crux Subsurface, Inc.

From our past president Brian J. Olson, Crux Subsurface, Inc. has several new positions available. For open positions and an on-line application visit the following url:

https://www.appone.com/MainInfoReq.asp?R_ID=1226572&B_ID=83&fid=1&Adid=0&ssbgcolor=5B5B5B&SearchScreenID=1349&CountryID=3&LanguageID=2

Geology Institutions

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:

Maxwell Clayton Utter

| mu47@nau.edu | cell: 858-663-9580|

Education

Education Level: Undergraduate Student 80 Credit Hours

Education Institution: Northern Arizona University

Majors: Environmental Sciences and Geology

College GPA: 3.46

SAT Score: 1850 690 Math, 630 Critical Reading, 520 Writing

Academic and Related Awards

Northern Arizona University

- | | |
|---|------------------|
| • Northern Arizona University Dean's List | 2013, 2014, 2015 |
| • Delta Epsilon Iota Honor Society Member | Nov 2014 |
| • National Society of Leadership and Success Member | Oct 2014 |
| • National Society of Collegiate Scholars Member | |
| "For exemplary academic performance" | May 2014 |
| • Cardinal Key Honor Society Nominee | Aug 2014 |
| • Blue Key Honor Society Nominee | Nov 2014 |

Del Norte High School

- | | |
|--|------------|
| • Nighthawk Scholar | |
| "For achieving a GPA of 4.0 or greater" | 2012, 2013 |
| • Principals Honor List | |
| "For achieving a GPA of 3.75 or greater" | 2012 |
| • Del Norte High School Certificate of Merit | |
| "For exceptional merit in academics" | Mar 2011 |

- Mensa Member Oct 2010

Oak Valley Middle School

- Science Olympiad 1st Place in Meteorology San Diego County Feb 2009
- Science Olympiad 3rd place in Meteorology State of California Apr 2009

Leadership

- Northern Arizona University Geology Club President 2014-present
- Delta Epsilon Iota Honor Society Treasurer Jan 2015-Aug 2015

Work Experience

- Northern Arizona University REDD+ Research Assistant Dec 2014- Mar 2015
- Teaching Assistant Northern Arizona University Chemistry 151 Aug 2014- Dec 2014
- Teaching Assistant Black Mountain Academy Aug 2014
- Habitat Restoration: San Diego Botanical Gardens Jun 2014- Aug 2014
- Landscaper Jun 2008 to Aug 2013

Volunteer Service

- Water Sampling Studies For Reintroduction of Native Species Jan 2010- Jun 2015
- Stone Ranch Elementary Science Fair Judge Feb 2011, Feb 2012
- Boy Scout Beach Cleanup Aug 2012
- 4S Ranch Autism Walk Founder Jan 2008- May 2013
Raised over \$10,000 for children with Autism
- Best Buddies- Event organizer Aug 2009- May 2013
- Facilitator- Special Education Basketball League Jan 2013- Jan 2015
- Bread of Life Homeless Facility Oceanside CA Aug 2011
- Home of Guiding Hands Building Renovation Jan 2011
- UCSD Brain Function Study Jan 2009

Extra-curricular Awards

- Autism Society of America Autism Angel Award Jan 2013
"For extraordinary service to the special needs community"

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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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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Contact: Louise Adams or Suzie Nawikas



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Contact: Dave Bloom



Contact: Rupert Adams, CEG

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Contact: Brian Olson

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