



September 2016

## LOS ANGELES BASIN GEOLOGICAL SOCIETY UPDATED MEETING ANNOUNCEMENT

*September 22 (Thursday), 11:30 AM*

*Please Note the Speaker and Topic Change:*

### Alyssa Beach

**John D. Cooper Paleontological and Archeological Center Volunteer**

## **A PALEODEPOSITIONAL RECONSTRUCTION OF MIDDLE MIOCENE TOPANGA FORMATION CETACEAN BONEBEDS, NORTHERN SAN JOAQUIN HILLS, ORANGE COUNTY, CA**

### **Abstract**

Cetacean bonebeds containing multiple articulated individuals are extremely rare, with only a handful of occurrences documented worldwide. In 1997, three bonebeds containing mostly articulated and well preserved cetacean remains were uncovered during grading in sedimentary rocks assigned to the Paularino Member of the Topanga Formation near Bonita Canyon, Newport Beach, California. Multiple bonebeds within a single stratigraphic unit, such as those discovered at Bonita Canyon Planning Area 26, represent a rare class of deep marine fossil accumulations that have not been previously studied in detail. Taphonomic, stratigraphic, and geochemical data were collected from 14 jacketed specimens removed from Bonita Canyon Planning Area 26 in order to determine the paleoenvironmental conditions that led to the accumulation of the bonebeds and to shed more light on these types of fossil accumulations. Results of this study indicate the Bonita Canyon bonebeds do not represent a condensed facies as was previously proposed in 1998 by The Keith Companies, but instead represent a composite concentration deposited in a continental shelf environment during a period of high sedimentation rates where episodes of high energy gravity flows alternated with periods of low energy accumulation along a northeast-southwest-trending submarine fan sequence. High net sedimentation rates corresponded with creation of high accommodation space as a result of the opening of the Los Angeles Basin, a progressive marine transgression, and subsidence of the Topanga Basin as a result of the shift in the tectonic regime along

western North America from a subduction zone to a transform margin during the middle to late Miocene. Overall, the results of this study provide valuable insight into the sedimentologic and taphonomic processes that lead to the formation of cetacean bonebeds, and demonstrate that high sedimentation rates may lead to well-preserved cetacean remains.

### **Speaker's Biography**

Alyssa is a California-registered Professional Geologist with over 10 years of environmental consulting experience. Her first work was as an environmental geology intern with Brown and Caldwell in Irvine, CA. She obtained her BS and MS Degrees in Geology from CSUF. She was an undergraduate selected to take part in CSUF Science and Math's Thailand Research Program, for which she worked on earthquake hazard analysis of the Pai Basin Fault using detailed gravity data. Her BS thesis under Dr. David Bowman focused on determination of the Venusian lithospheric thickness using linear fracture frequency-length statistical analysis. She began her graduate work under Dr. John Foster, researching trigger and slide mechanisms of the Blackhawk Landslide in Lucerne Valley, California, during which she was awarded the Judith A. Presch Desert Research Scholarship, before switching to her final master's thesis (her talk's subject). She currently volunteers at the John D. Cooper Paleontological and Archeological Center in Santa Ana, continuing her research on the Bonita Canyon Bonebeds. She is also an avid cyclist and enjoys leading southern California field trips for Boy and Girl Scout troops as an official geology and astronomy badge counselor.

## Meeting Time, Place, Cost and Reservations

### Time:

**Thursday, September 22, 2016**

### Meeting Agenda

**Lunch Served: 11:30 AM to 12:00PM**  
**Announcements: 11:45 AM to 12:00 PM**  
**Guest Speaker: 12:00 PM to 12:45 PM**  
**Questions/Close: 12:45 PM to 1:00 PM**

### Place:

The Grand at Willow Street Conference Center located at 4101 East Willow Street, Long Beach, CA (562-426-0555). Take Lakewood Boulevard south from the San Diego Freeway (405), turn west onto Willow Street, and turn right onto Grand Avenue at the sign for the Center. Park free in the garage structure.

### Cost:

Lunch and Speaker: \$25.00 with reservations  
**\$30.00 without reservations**

Retired: \$20.00

Student: **\$5.00**

**PAYMENTS IN CASH OR CHECK ONLY**

### Meeting Reservations:

**We encourage you to make your reservations using the LABGS web site, at [www.labgs.org](http://www.labgs.org)**

Otherwise, call Ryan Weller at (562) 637-6019, or e-mail [ryweller@gmail.com](mailto:ryweller@gmail.com).

### Reservations must be made by:

**10:00 AM Tuesday September 20<sup>th</sup> to receive the discount price noted above.**

**As always, walk-ins are welcome.**

## Student Sponsorship

### ***Looking for Student Lunch sponsors:***

If you or your business/organization would like to become a Student Lunch Sponsor please let us know.

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## **OUR WEB SITE ADDRESS:**

**[www.labgs.org](http://www.labgs.org)**

**Announcement:** With great sadness, the LABGS informs our members and friends who may be unaware of it already of the passing, on July 25, 2016, of long-time LABGS member **Dick Brown**.

Dick was a good friend and strong contributor to the local geological community and the LABGS in particular. Among Dick's many achievements, he compiled an excellent publication about the geology of the Palos Verdes Peninsula, and over the years he very capably led many geological field trips to this area.

We understand Dick had been in the VA Hospital for some time before his passing. Fortunately, we understand his family was able to spend time with him before he passed.