

March 2021



## LOS ANGELES BASIN GEOLOGICAL SOCIETY

***March 25th (Thursday) – 11:45 AM***

***This will be a virtual (on-line) meeting using ZOOM. See below for instructions.***

### **Multiple Phases and Styles of Deformation in the Monterey Formation, Crystal Cove to Newport Beach, California.**

**Rick Behl and the 2020 CSULB summer field class  
Professor and Geology Dept. Chair, CSULB**

#### **Abstract**

Throughout much of California, the Miocene Monterey Formation appears excessively deformed compared to other spatially or stratigraphically associated rock units. Some of this is a mechanical product due to its heterogeneous, thin-bedded character that permits complicated flexural-slip folding, but much of the complexity arose from the rapidly changing tectonic setting during and following deposition over the past ~10 Myr. Spectacular beach platform and cliff exposures between Crystal Cove State Park and Corona del Mar, California, were studied by the 2020 CSULB Field Geology class to unravel this complex history. The intrepid students braved tides and waves to make many 1000's of measurements of open and tight folds, primary and secondary fracture sets, deformation bands, intrastratal microfaults, and multi-layer cross-cutting thrust faults, normal faults and conjugate sets of strike slip faults in Monterey dolomite, mudstone, chert and sandstone. They identified a succession of deformational events that partly meshes with the published regional sequence of extension, rotation and transpression, but also differs – likely due to the basin-margin setting between the Newport-Inglewood and Pelican Hill fault zones. Be

prepared to immerse yourself in many beautiful photos of the complicated geology and an abundance of stereonetts to understand the spatial relationships.

#### **Speaker's Biography**

Richard J. (Rick) Behl is Professor and Chair of the Department of Geological Sciences at California State University Long Beach, and Director of the MARS Project (Monterey And Related Sediments) industrial affiliates program. Rick earned his Bachelor's degree from the University of California (UC) San Diego, his PhD at UC Santa Cruz, and was a Post-Doctoral Fellow at UC Santa Barbara. His expertise is in the sedimentology and sedimentary petrology of hemipelagic and pelagic sediments, and their relationship to climatic, oceanographic, and tectonic change. Rick's research focuses on the Quaternary Santa Barbara Basin and the petroliferous Miocene Monterey Formation.

**This will be a virtual meeting using Zoom.**

**When:**

**Thursday, Mar. 25, 2021**

**11:45-1:00**

**Virtual Meeting Reservations:**

**Reservations should be made by:  
12:00 Noon Wednesday Mar. 24<sup>th</sup>.**

**To register please email our LABGS secretary, Joseph Landeros at [landerosjd@gmail.com](mailto:landerosjd@gmail.com)**

This is just to get a head count.

**To join the talk, please use the following Zoom link:**

**<https://csulb.zoom.us/j/84638754132>**

You may also dial in using your phone.

**United States:**

- +1 669 219 2599 US (San Jose)
- +1 669 900 6833 US (San Jose)
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- +1 301 715 8592 US (Washington DC)
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**Meeting ID: 846 3875 4132**

**Please download the ZOOM app before the start of the talk, if you have not already done so.**

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**Do you know if your PSAAPG/LABGS membership is current?**

*If you don't know, please check via the PSAAPG website:*

**<http://www.psaapg.info/cloud/miscellaneous/dues.php>**

*Please inform a LABGS Board member if you have a pertinent announcement or chime in at the end of the Zoom meeting.*