



# San Joaquin Geological Society

**Date:** Tuesday, October 10, 2017

**Time:** 6:00 PM Social Hour  
7:00 PM Dinner  
8:00 PM Lecture

**Place:** Eagles Lodge  
1718 17<sup>th</sup> Street, Bakersfield, CA 93302

**PSAAPG Members**  
\$25 with reservation  
\$30 without reservation

**Non PSAAPG Members**  
\$30 with reservation

**Full-time Students with ID:**  
\$10 - Courtesy of  
California Resources Corporation

**\* RSVP \***

**By: noon Monday,  
October 9, 2017**

Register online:  
<http://www.SanJoaquinGeologicalSociety.org/>

Pay Online via **PayPal** or at  
the door

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<http://www.SanJoaquinGeologicalSociety.org/>

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## The Miocene Petroleum System of the Santa Cruz County Coast, California

Presented by: Allegra Hosford Scheirer, PhD, Stanford University

**Abstract:** Numerous asphalt-saturated sandstone deposits on and near the Santa Cruz County coast in central California confirm the presence of a previously undefined petroleum system. The major structural feature that has affected this coastal region is the San Gregorio Fault, a right-lateral strike-slip fault of the North America-Pacific plate boundary system that offset an asphalt-saturated sandstone at Point Reyes National Seashore from this deposit on the Santa Cruz coast by 115 km of right-lateral movement since 23 Ma. The likely petroleum source rock for these asphalt deposits is California's "superstar" oil source rock, the Monterey Formation. However, because the present-day overburden rock onshore is insufficiently thick to thermally mature the Monterey in the coastal region itself, petroleum must have been generated in a marine basin offshore (and adjacent to the San Gregorio Fault). Thus, understanding the burial history of this source rock is critical, because uplift and erosion associated with strike-slip faulting removed evidence of the overburden rock in the region.

This talk will review the essential elements of the Santa Cruz Coast Petroleum System, discuss a unique geochemistry-based tie point for defining the offset along the San Gregorio Fault, present results from burial history modeling, and show photographs of spectacular outcrops of large sandstone injectites and carbonate cold seep vent structures.

**Biography:** Allegra Hosford Scheirer is a Research Scientist at Stanford University, where she co-directs the Basin and Petroleum System Modeling Industrial Affiliates Program. Prior to Stanford, Allegra was a Research Geophysicist at the USGS. She is the editor of USGS Professional Paper 1713 and a past Associate Editor of Journal of Geophysical Research. Allegra's degrees are from the MIT-WHOI Joint Program in Oceanography (Ph.D.) and Brown University (Geology-Physics/Math).

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