



# San Joaquin Geological Society

Date: **Tuesday, February 13<sup>th</sup>, 2024**

Time: **6:00 PM Social Hour**  
**6:30 PM Dinner**  
**7:00 PM Lecture**

Place: **American Legion Hall**  
**2020 H Street, Bakersfield, CA 93302**

## PSAAPG Members

\$35 with reservation  
\$40 without reservation

## Non PSAAPG Members

\$40 with reservation

## Full-time Students with ID

FREE!

### \* RSVP \*

By: **noon Monday,**  
**February 12<sup>th</sup>, 2024**

Register online:

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

Pay online or cash/check at the door

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## Where Faults Get Stuck: The Nature of Plate Boundary Coupling and Implications for Earthquakes

Presented by: **Dr. Matt Herman**

**Abstract:** The general earthquake process (elastic rebound model) has been understood and successfully applied in the context of plate tectonics for decades. Yet the locations and effects of frictionally locked “asperities” (areas of faults that can generate large earthquakes) remain elusive, particularly in underwater subduction settings where the largest earthquakes occur and can generate massive tsunamis. New geophysical observations in subduction zones from Chile to New Zealand to Alaska, combined with advanced geodynamic models of fault locking processes, allow us to better constrain the locations of asperities and determine the effects of locking on earthquake behaviors. Lessons from these subduction-focused models can also be applied to understanding the San Andreas fault system here in California.

**Biography:** Dr. Herman is an Assistant Professor in the Department of Geological Sciences at California State University Bakersfield, where he teaches courses on natural hazards, geophysics, plate tectonics, and geodynamics. He collaborates closely with the US Geological Survey National Earthquake Information Center in Golden, CO, providing seismotectonic expertise to support their earthquake monitoring program. Dr. Herman has a BA in Geology and Physics from Amherst College in Amherst, MA, and a MS and PhD in Geosciences from Penn State. He did his postdoc at Utrecht University in the Netherlands.

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