



San Joaquin Geological Society

Date: **Tuesday, Dec 10th, 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,
December 9th, 2024

Register online:

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

Pay online or cash/check at
the door

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2024-2025

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Ivan.Aburto@crc.com

Burn Severity and Its Impact on Soil Properties: A Study of the 2016 Erskine Fire in the Southern Sierra Nevada, California

Presented by: Dr. Junhua Guo

Abstract: Wildfires can cause debris flow events in affected areas due to changes in the physical properties of burned soils, which are linked to burn severity. A study in California's Sierra Nevada explored the impact of burn severity on soil physical properties using various tests. Results showed that higher burn-severity soils had higher total organic carbon content and liquid limit, and the plastic limit was also higher. The plasticity index was highest among low burn-severity soils, and high burn-severity soils had lower smectite and kaolinite/chlorite abundances compared to lower burn-severity soils. Grain size distribution and shear strength were not significantly impacted by burn severity. The study suggests that total organic carbon content is the most significant factor affecting the physical and mechanical properties of soil. These findings may help assess debris flow hazards in burned areas and highlight the need for further research on the effects of wildfires on soil properties and their contribution to debris flow events.

Bio:

Dr. Junhua Guo is an associate professor of geology at CSUB. His research focuses on marine sedimentation, paleoclimate, and geohazards.

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