

School of Earth and Environmental Sciences

Fall 2025 Colloquium Series

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12:15 PM -1:30 PM

Science Building C-207

Zoom ID: 843 0287 5858

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Beneath and Beyond: Influence of Surface Processes on Crustal Deformation

From California's Central Valley to the rift lakes of East Africa, climate-driven hydrological loading can influence crustal deformation. In this talk, I will discuss how rainfall, erosion, and sedimentation affect the deformation of the crust across timescales ranging from seasonal to geologic. Seasonal hydrological loading could modulate earthquake rates, while glacial-interglacial lake-level fluctuations may alter fault slip and mantle melting.

Over millions of years, climate-controlled erosion and sedimentation reshape the structure and orientation of continental rifts.

By integrating geodynamic, landscape-evolution, and seismic models, this research highlights the coupled evolution of climate and tectonics and their combined role in shaping Earth's dynamic system.

