UC **SANTA BARBARA**
Department of Earth Science

Speakers Club

WEBB 1100 • THURSDAY MAR 15th.• 2:00 PM

Temporal, geochemical, and geodynamic history of the active paleo-Pacific margin of Gondwana

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The paleo-Pacific margin of Gondwana, including South America, Zealandia, Australia, and Antarctica, was an active subduction margin for over 500 million years. A rich history of Phanerozoic Gondwana margin subduction is preserved within the plutonic, volcanic, and sedimentary rock record in these regions. Decades of investigation into the timing and petrogenesis of arc-related rocks in South America and Australia has formed the basis of a detailed framework of the evolution of subduction zones (i.e., accretionary orogens), the relationship between volcanism and climate, and the geochemical evolution of continental crust. The history of this active margin within the Antarctic sector, however, remains poorly understood, primarily due to limited exposure and inaccessibility. In this talk I will utilize an extensive new zircon age and Hafnium isotope dataset produced here at UCSB for rocks from throughout the Transantarctic Mountains and West Antarctica to review the evolution of the Antarctic sector of the Gondwana margin from the Cambrian through the Early Cretaceous. I will then compare this dataset with a new compilation of published data from Australia, Zealandia, and Australia to outline a comprehensive temporal, geochemical, and geodynamic history of Phanerozoic subduction along the paleo-Pacific margin of Gondwana.