

TIMING AND DRIVERS OF EXHUMATION IN THE HINTERLAND OF THE NORTH AMERICAN CORDILLERIA FROM DETRITAL ZIRCON U-PB AND (U-TH)/HE DOUBLE-DATING

Kathleen Graham

University of Kansas, Geology, Lawrence, KS, USA

k202g694@ku.edu

ABSTRACT

The late Cretaceous to early Cenozoic Nevadaplano is a well-recognized plateau that formed in the hinterland of the North American Cordillera. Although studies suggest that the Nevadaplano was in place by the Eocene, its exhumation history and the underlying drivers for development of the plateau are not well understood. Thermochronology studies from the western Great Basin and Sierra Nevada show a two-stage cooling and exhumation history for the Nevadaplano. Although late Cretaceous exhumation fits well with the timing of deformation associated with the Sevier-Laramide orogeny, rapid exhumation in the Eocene is unexplained by the tectonic framework of the region. Rapid erosion in response to changing global climate at the Eocene Climatic Optimum is a potential driver that has not been explored. This study will employ detrital zircon double-dating, pairing U-Pb and (U-Th)/He ages, to constrain the age, provenance, and depositional lag time of Eocene forearc and trench-slope sediments in Great Valley and coast ranges in California. These sediment were likely sourced from the western Nevadaplano, and may provide valuable insight into the Eocene exhumational history of the region.

AAPG Search and Discovery Article #90298 © 2017 AAPG Foundation 2016 Grants-in-Aid Projects