

### **Detrital Zircon (U-Th)/He and U-Pb Geochronology of the Floresta Basin, Eastern Cordillera, Colombia**

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The Floresta basin is located in the axial portion of the Eastern Cordillera of Colombia and contains 2 km of Cenozoic nonmarine and marginal marine sediment. The basin is located in what is thought to be the foredeep of the Late Cretaceous - Paleogene foreland basin. Shortening-related uplift of the Eastern Cordillera caused segmentation of the early Cenozoic foredeep. Uplift of the Eastern Cordillera is also the proposed cause of hydrocarbon generation and expulsion, as well as regional climatic and ecological changes. However, the timing of shortening-related uplift and exhumation in the axial Eastern Cordillera is largely inferential.

Here we present ~ 1500 new zircon U-Pb ages from 15 Cretaceous and Paleogene samples. Zircon age populations for Cretaceous and early Paleocene units are all older than 500 Ma. Upper Paleocene strata record the appearance of abundant Phanerozoic populations; particularly, populations with peak ages less than 175 Ma. These Phanerozoic populations persist, with some variability, throughout the remainder of the exposed Cenozoic section (up to middle Oligocene). We also present 60 new (U-Th)/He ages from Paleogene samples. Similar to the U-Pb populations, these show a shift between the early and late Paleocene from cooling ages between 300-700 Ma to ages ranging from ~ 50-1000 Ma. In the late Eocene, the range of cooling ages is restricted to 50-200 Ma.

We interpret the shift in both U-Pb populations and (U-Th)/He ages between the early and late Paleocene to be the result of the initial influx of Central Cordillera-derived detritus to the axial zone of the Eastern Cordillera. The decrease in the range of (U-Th)/He ages in the late Eocene is attributed to an additional, younger uplift event in the hinterland of the Floresta basin.