

# **TRIASSIC NORTH AMERICAN PALEODRAINAGE NETWORKS AND SEDIMENT DISPERSAL OF THE CHINLE FORMATION: A QUANTITATIVE APPROACH UTILIZING DETRITAL ZIRCONS**

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## **ABSTRACT**

The Triassic Chinle Formation is a fluvial succession deposited in a backarc setting across the present-day Colorado Plateau of the southwestern United States. The Chinle represents the first integrated and preserved east-to-west trans-continental fluvial system following development of the Appalachian-Ouachita cordillera. This study will collect new samples for detrital zircon analysis, as well as upgrade existing samples (to n=300) from previous studies to improve the resolution of Triassic sediment provenance from source to sink. The improved dataset allows appraisal of the multiple provenance terranes that contributed to the Chinle depositional system to delineate and reconstruct paleodrainage patterns. The additional samples will be collected systematically from the base of the Chinle, and vertically throughout the section to capture a regional story of how the continental scale drainage reorganized through time. U-Pb ages of detrital zircons will be utilized to provide quantitative fingerprinting information to constrain interpretations for the origin and transport history of the Chinle fluvial succession in time and space. This systematically collected dataset will aid in the development of a well constrained model for sediment routing and paleodrainage in the Chinle, which is essential to understand and predict the nature and spatial distribution of ancient fluvial deposits, and predict large-scale facies distributions in fluvial aquifers and petroleum reservoirs.

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