Refining the Cretaceous-Paleogene Boundary in central and eastern Utah

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Iconic dinosaurs – tyrannosaurs, sauropods, ceratopsians, and hadrosaurs – roamed central and eastern Utah during the final days of the Mesozoic Era. More enigmatic but no less important mammal clades – multituberculates, marsupials, and protoeutherians – survived to colonize and radiate through the early Cenozoic Era. Paleontological studies of the Upper Cretaceous to Paleogene North Horn Formation in central and eastern Utah, mostly focused on dinosaur fauna, have been conducted since the 1930s. A surge of more recent discoveries is highlighted by ongoing excavations of ceratopsian material and collection of numerous mammal specimens by the Prehistoric Museum at USU Eastern, but it remains demonstrably understudied compared to other fossil-bearing strata in Utah. Previous workers have attempted to identify the Cretaceous-Paleogene (K-Pg) interval in the North Horn Formation from outcrop exposures across the Wasatch Plateau. However, its precise location across central and eastern Utah is only circumstantially defined by an absence of data rather than a definitive presence. Thus, despite the significance of those fossils with regards to our understanding of ecosystems leading up to, and through the recovery from, the end-Mesozoic mass extinction, the temporal occurrence of them relative to this event remains elusive. Broadly, this project aims to refine the K-Pg boundary in central and eastern Utah and provide context for past, present, and future paleontological work in the North Horn Formation. To work towards that overarching goal, we will undertake stratigraphic sections, palynological sampling, and X-ray fluorescence scans of North Horn strata from across the Wasatch Plateau (North Horn Mountain, Ferron Mountain, and East Mountain in the Manti-La Sal National Forest) to document depositional patterns, record floral turnover, and identify elemental enrichment across the K-Pg boundary interval.