MARS GEOMORPHOLOGY: SEDIMENTOLOGY/STRATIGRAPHY, IMPACT-RELATED FEATURES AND PROCESSES, AND GULLIES
8:30 a.m.  Waterway Ballroom 1

Chairs:  Fred Calef III
Kenneth Edgett

8:30 a.m.  Edgett K. S. *
The Other Sedimentary Rocks of Early Mars [#1379]
Mars sedimentary rocks studied since seminal Malin and Edgett (2000) are a sub-set of the whole and might dominate throughout the heavily cratered terrain.

8:45 a.m.  Bramble M. S. *  Mustard J. F.
Stratigraphic Relationships in Northeast Syrtis Major, Mars: Approximately 250 Million Years of Geological History Spanning the Noachian-Hesperian Boundary [#2582]
The rocks hold eons / How they lay tells us their age / In Northeast Syrtis.

9:00 a.m.  Sneed J. *  Mayer D. P.  Lewis K. W.  Kite E. S.
Origin of Sedimentary-Rock Mountains on Mars Constrained by Layer-Orientation Data [#2219]
We use 200 HiRISE DTM layer orientation measurements to show that bedding planes systematically dip away from the center of martian sedimentary mounds.

9:15 a.m.  Gabasova L. R.  Kite E. S. *
Sediment Compaction on Mars and Its Effect on Layer Orientation [#1209]
Layer tilts in Gale? / Compaction might be why, but / Donut shape is key.

Mars Sedimentary Rock Metrology from MAHLI Quantitative Relief Models [#2834]
Measurements of sub-mm scale relief of martian rocks from the Curiosity MAHLI camera have produced quantitative relief models (QRM’s) for geologic analysis.

9:45 a.m.  Sanders C. *  Wordsworth R.  Macdonald F.
Impact Gardening as a Mechanism for Hydrothermal Alteration and Atmospheric Evolution on Noachian Mars [#2634]
We present models which test the validity of a mechanism for hydrogen production on Noachian Mars: Impact-induced hydrothermal alteration of shocked material.

10:00 a.m.  Barlow N. G. *
The Role of Uplift in the Formation of Central Pits in Martian Impact Craters [#1316]
Detailed study of central pit craters on Mars reveals evidence of uplift followed by collapse in the formation of both floor pits and summit pits.

Gale Crater Morphology Compared to Other High Central Peak Craters on Mars [#2822]
Gale crater has a central peak equal or greater than its rim height. Using similar craters on Mars, we attempt to reconstruct the antecedent crater morphology.

10:30 a.m.  Warner N. H. *  Golombek M. P.  Sweeney J.  Pivarunas A.
Regolith Thickness Estimates from the Size Frequency Distribution of Rocky Ejecta Craters in Southwestern Elysium Planitia, Mars [#2231]
We provide an analysis of regolith thickness at Elysium Planitia using the onset diameter of rocky ejecta craters and accounting for local surface processes.
10:45 a.m. Sylvest M. S. * Conway S. J. Dixon J. C. Patel M. R. Barnes A.  
*Mars Gully Slope Constraints for Sublimation-Induced Granular Flows [3008]*  
We use simulation experiments under martian conditions to explore the slope limits of mass wasting events triggered by CO₂ sublimation.

11:00 a.m. Núñez J. I. * Barnouin O. S. Seelos F. P. Murchie S. L.  
*Compositional Constraints on Martian Gully Formation as Seen by CRISM on MRO [3054]*  
We present results from compositional analysis of martian gullies as seen with CRISM on MRO.

11:15 a.m. Diniega S. * Allen A. Perez T. Hansen C. J.  
*Tracking Gully Activity Within the North Polar Erg, Mars [1740]*  
It’s dark and cold, but / Frost or wind or in-between / Something moves the sand.

11:30 a.m. Allen A. R. * Diniega S. Hansen C.  
*Gully and Aeolian Activity Within the “Tleilax” Dune Field in the Olympia Undae, Mars [1759]*  
Mars polar dune sea / Rough wind blows, or ice ruptures / Sand crests gullify.