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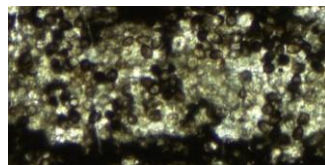
Research areas:

My research is focus on studying the relationships between Cenomanian/Turonian black shale/marlstone and black laminated limestones (fig. 1), and their spatial and temporal changes in the North Western part of Mexico, Cohaulia State. I am particularly interested in understanding the role of sedimentation patterns vs. paleobacterial/cyanobacterial communities and their cyclostratigraphic interrelationship in decadal to Milankovitch cycles during warm-equable climates. The interest after this research lays in generating topical knowledge on the stratigraphic record of organic-rich sediment, and its sedimentary patterns and their relationships with oceanic anoxic events, which are intrinsically linked to greenhouse climates and anthropogenic effects. Analytical techniques applied to this study are Scanning Electron Microscopy (SEM), Carbonate/TOC analysis, Biomarkers, and Inorganic geochemistry.

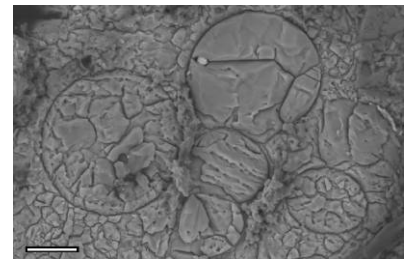
A major development of the current research is the fact that paleocyanobacterial/bacterial (fig. 2, 3) communities have been identified and are understood to have played a major role as contributors to the calcium carbonate pump as well as in the sequestration of organic matter into the sedimentary column. Although vertical changes are readily observed at the outcrop level, analysis of the carbonate/carbon, together with standard petrographic and SEM imaging have further shown that that these persistent patterns are indeed the reflection of intricate variations on the amounts of calcifying cyanobacterial communities.



Fine laminated calcilutite light laminae are composed of Cyanobacteria microspheroids



Microphotograph of microspheroids these are usually form the light laminae as aggregates



SEM image of microspheroids scale bar = 20 μ m
