

## **West Gulf Coast Stratigraphic Project**

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*Working Group Participants:* Arkansas Office of the State Geologist (Scott Ausbrooks, Peng Li, Doug Hanson), Louisiana Geological Survey (Akinbobola Akintomide), Mississippi Geological Survey (David Dockery), Tennessee Geological Survey (Valarie Harrison), Texas Bureau of Economic Geology (Lorena Moscardelli, Lulia Olariu, Kelly Hattori, Peter Flaig)

*Scientific Approach:* A decision was made during the initial meeting of the working group to follow the scientific approach successfully employed in the East Gulf Coast Stratigraphic project. This approach will employ regional along strike and down dip cross sections to illustrate stratigraphic and facies variations of Mesozoic and Cenozoic units across the western side of the Gulf Coast basin. Stratigraphic variations will be documented using descriptions of each unit in the section in each state derived from literature reviews and any new work. Descriptions include lithologic characteristics, history of nomenclature, biostratigraphy or other age constraints, and current status (formal, informal, or abandoned). This documentation format is closely aligned with the format used in Geolex to simplify future uploads to that system. In addition, members of the working group will develop a list of future projects that could be used to address knowledge shortcomings identified during the study, new research at either a local or regional level, and formal updates to the stratigraphic lexicon.

A decision was made during the initial working group meeting to hold several in-person workshops to discuss the project status, any problems encountered, any needs of the working group, and primarily for working group members to get to know each other and develop relationships that could lead to future collaborations. Three workshops were held in Baton Rouge, LA (July 2023), the initial meeting, El Dorado, Arkansas (March 2024), and Austin, Texas (October 2024). Both the Arkansas and Texas workshops featured one day field trips that allowed the host organization to demonstrate new work in stratigraphic units of interest to the group.

*Summary of Findings to Date:* The project has been beneficial for each member of the working group by providing opportunities to review the current status of Mesozoic and Cenozoic units that occur in their states, and to compare the units across state lines with members of the working group. This will have significant impact on regional stratigraphic nomenclature questions, as well as characteristics of regional aquifers, the occurrence of regionally distributed economic mineral deposits, and new information on biostratigraphic diversity. Members of the working group from Arkansas and Tennessee have used the project for new field work in previously unmapped Pleistocene units and the Eocene Claiborne and Paleocene – lower Eocene Wilcox Groups that has led to the identification of new units and further subdivision of the groups. The Louisiana members of the working group have used the project to introduce a new member of the staff to the state's stratigraphy. The Texas members have also worked in the Wilcox Group to further refine their understanding of the unit. Members of the working group from Alabama are preparing a chart for the Cenozoic that incorporates known biostratigraphic markers and new work to further refine our understanding of the ages of units in the section. The regional cross sections are being prepared using geophysical logs, core/cuttings descriptions, and local knowledge. The along strike lines are tied to the ones prepared for the East Gulf Coast project. When complete they will provide a

detailed three dimensional interpretation of the Mesozoic and Cenozoic components of the northern Gulf Coast basin.