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## Preliminary Report on Radiolarians from Gulf of Mexico Deepwater Seafloor Samples

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### ABSTRACT

Calcareous ooze covers the seafloor in the Gulf of Mexico. In order to better understand paleocurrent flow and ancient sediment distribution, a research study was undertaken by ALS Oil & Gas Reservoir Laboratories to collect modern seafloor ooze samples from different locations in the offshore Mississippi Canyon and Walker Ridge areas. While working on well locations during 2016 through 2017, remotely operated underwater vehicles (ROVs) collected seafloor samples from five different locations. The samples were processed and examined at the ALS Oil & Gas micropaleontology lab for their fossil components with the goal of observing the presence of radiolarians.

Four of five samples had very rare radiolarians, but in one sample from the Mississippi Canyon area, more than 25 different genera of both nassellarians and spumellarians were identified. Besides high diversity, the radiolarians recovered in this sample had higher abundances compared to the other four samples.

Utilizing a Scanning Electron Microscope (SEM) and a new method of photography developed by Innova Plex, Inc., the recovered radiolarian specimens have been illustrated and their taxonomy briefly discussed in this poster. The recovered assemblage from the Gulf of Mexico sample has been compared with other radiolarian assemblages from low latitude, open oceanic and semi-restricted basins around the world.

As a result, a model for localized radiolarian increase is introduced. The spatial distribution of the collected samples has been compared with existing predominant currents in the Gulf of Mexico and then applied to gain a better understanding of ancient radiolarian events, specifically those observed in the early Eocene just above the prolific hydrocarbon producing Wilcox Formation in the Gulf of Mexico.