Summary:
This paper illustrates the construction of an improved 3D stochastic simulation and visualization of the St. Louis oolite shoal complex, particularly focusing on the development of facies models. The methods used include object-based stochastic modeling and variogram analysis to understand the 3D external geometries of St. Louis oolite shoals. Simulation results for permeability and porosity are presented, along with stochastic models for facies, permeability, and water saturation. The work suggests that a combination of geological data and advanced simulation techniques can be effective in reservoir modeling, especially in complex carbonate systems like the St. Louis oolite complex. Further work involves refining the models for better integration with flow simulation and production forecasting.

Further Work:
1. Validate model properties using a database of real-world data regarding the St. Louis oolite complex. 2. Compare the reservoir simulation results to observed well data to evaluate the model's accuracy. 3. Develop high-resolution models to better understand the internal structures of the St. Louis oolite complex. 4. Perform reservoir simulation to verify the model's predictions using actual field history data.