The United States Geological Survey estimated (2013) that the Late Devonian to Early Mississippian Bakken Formation holds in excess of 7 billion barrels (~1.1 billion m$^3$) of recoverable oil, making it one of the top 50 oilfields in the world. Most of the production comes from shallow-marine sandstones of the Middle Bakken Member that are directly overlain and underlain by extremely organic-rich shale source rocks (Upper and Lower Bakken Shale members respectively). Although not oil-productive everywhere, the Middle Bakken forms a relatively sheet-like unit that covers an area of more than 200,000 square miles (~520,000 km$^2$) of the intracratonic Williston Basin.

The vertical juxtaposition of shallow-marine reservoir and more distal source rocks over such a large area, without intervening transitional facies, is unusual from a stratigraphic perspective. One possible explanation would require global fluctuations of sea level to drive geologically rapid and extensive shoreline movements in this relatively stable basin.

Friday, March 22$^{nd}$  3 – 3:50p  FLN 2.01.20