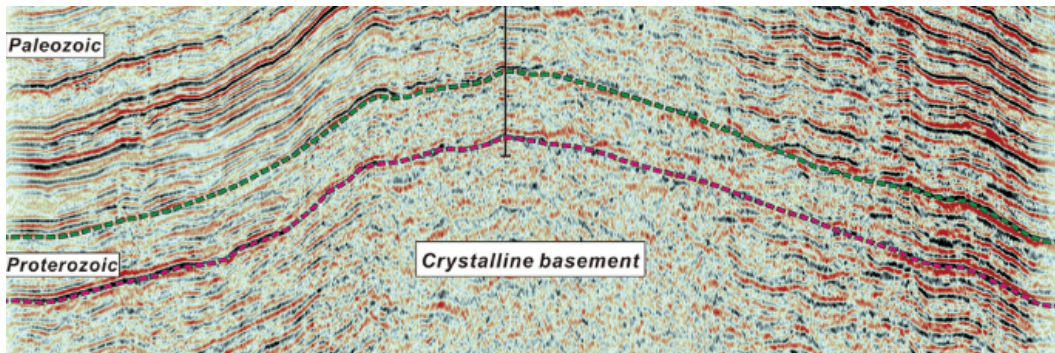


## YMI - an analogy

To better explain where YMI is positioned, please consider the following analogy (using an oil&gas analogy as this is where our data, image analysis and pattern recognition experience originates).

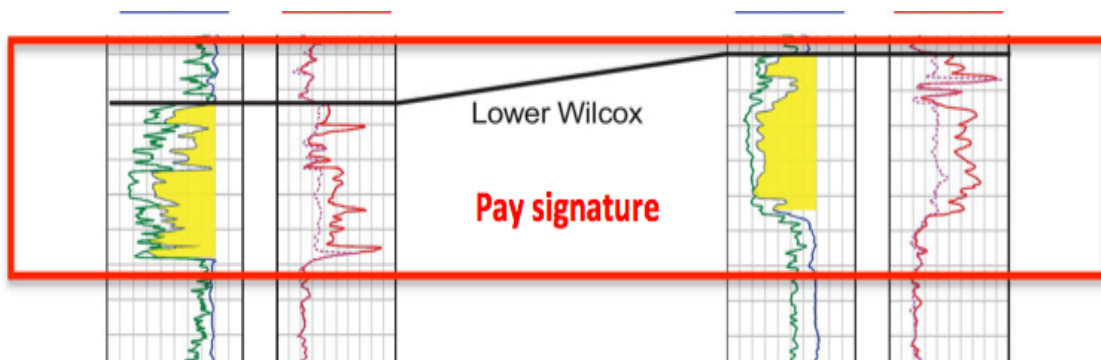
In oil&gas exploration there are multiple disciplines involved in the discovery and production of a reservoir, and they typically become involved in this order:

1. *Geophysics* (seismic) uses sound waves to delineate subsurface structures that may constitute structural "traps" where hydrocarbon may reside.

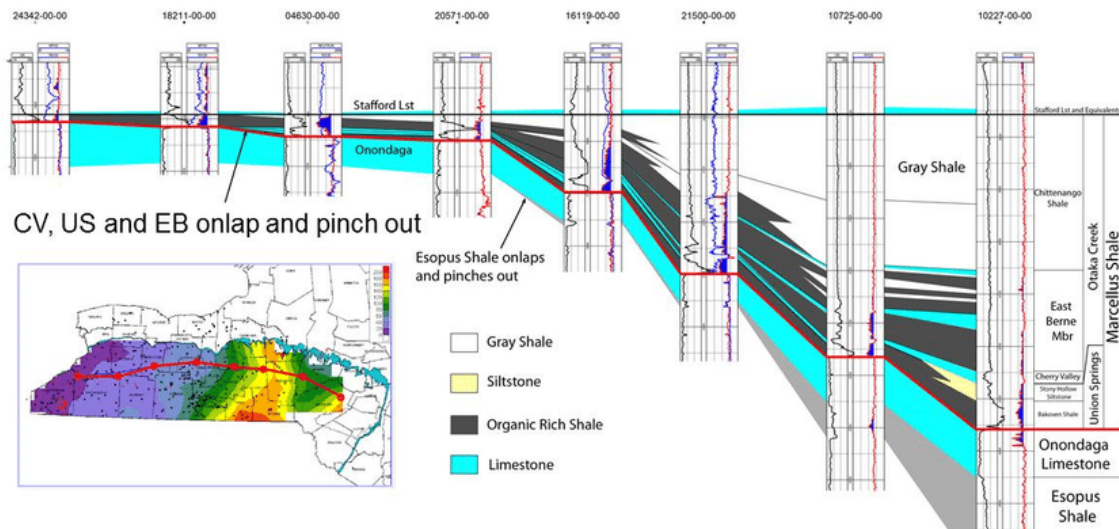


Seismic can be thought of as a somewhat subjective "pointer" - Ham-D and the Beck Depression Inventory are analogues;

2. *Geology* relies upon a series of objective, sensor-based down-hole measurements collectively called "well logs". These sensors measure the type of rock (measured by gamma rays), how many holes are in the rock (porosity), how connected the holes are (permeability) and what's in the holes (electrical resistivity - different fluids have different resistivities). Certain combinations of attributes constitute hydrocarbon "pay signatures".



Well logs from multiple drill holes are examined and signatures are connected in what are known as "cross sections" to assess potential geographical extent. Here is an example:



Geology is a largely manual discipline that involves lots of time and effort spent gathering and formatting data, connecting related features, and calculating many what-ifs. Geology does not provide a definitive answer, rather an informed probability prediction of the presence and extent of a hydrocarbon deposit - in the mental health world, geology would be analogous to exploratory sessions with the patient prior to diagnosis;

3. *Petrophysics & Engineering* - determining the type of hydrocarbon (light oil, heavy oil, gas liquids, etc.) and the volume present - this would be analogous to later patient sessions where a disorder is diagnosed and treatment specified. Petrophysics & Engineering stand on the shoulders of Geology.

YMI functions as "Geology" in this analogy. It also gathers data relationships, looks for signatures and performs what-ifs; but rather than slow manual processes it employs a specialized database and supervised machine-learning to provide fast, consistent, predicted disorder probabilities. It is a "threat-assessment" tool - diagnosis and treatment remains with the clinician.

End