**Geography 507: Seminar 7**

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Date: November 17, 2019

The speaker at this seminar was Dr. Glenn Spinelli from New Mexico Tech. His talked focused mostly on fault zone permeability and also marine hydrogeology. His research looks at the importance of faults not just for the role they usually are focused on in causing earthquakes. His research looks at the importance of how they impact the flow of petroleum and groundwater in both aquifers and oil fields. A lot of his research is taking place at the Loma Blanca Fault and has shown that these fault zones can directly impact the quality and production of a water or oil well. The cements in these faults are high in minerals that have been gathering for extended periods of time and they make it difficult for fluids to flow.

In ocean crusts his research is focusing on fluid flow and its role in impacting heat transport. His research in marine hydrogeology has taken place in Costa Rica, the Nankai Trough, Cascadia and Chile. Their research found that these effects of circulating fluids may extend closer to the shoreline than previously thought. A lot of this marine based research appeared to focus on subduction zones.

His research methodology utilized a number of techniques including core drilling and the resistance in the earth. From my understanding they were able to set up complicated experiments allowing for the flow of an electrical current through these faults. This information was a key component of their understanding of how these faults play a role in impeding the flow of other things like water.