



**geoconvention**  
Calgary • Canada • May 13-17 **2019**

## **The Modern Geophysicist: Using Geophysics the Geophysicist to Add Value and Influence Business Decisions**

*Matt, R., Ng, Chelsea, L., Squires. Painted Pony Energy.*

### **Summary**

The role of the Geophysicist has evolved – specifically with respect to unconventional resource development. While the Geophysicist must still reduce subsurface risk and solve geoscientific challenges, the unique skills that a Geophysicist has developed in their career can be leveraged to support non-geophysical challenges and integrated across disciplines. This requires a paradigm shift. The Modern Geophysicist must act as an internal service provider within a multi-disciplinary team and relentlessly strive to influence business decisions and achieve quantifiable results that provide economic value. This presentation will highlight the use of technology as a platform for integration, along with several brief examples of alternative approaches that Geophysicists can use to contribute to the business. This includes: integration of non-seismic data to seismic data to improve prediction of well economics and multi-horizontal pad efficiency; use of visualization as a tool to communicate with drilling/completions/production teams; the importance of dynamic velocity modeling to improve the accuracy of well geo-prognosis and well planning; the use of microseismic moment tensor data to understand the contribution of natural fractures to well productivity and completions designs; and visualization/application of full asset field development scenarios to reserves and operational efficiency. Geophysicists possess skills and data that are well-suited to provide measureable economic value. These strategies include improving the exploitation of hydrocarbons, reducing the cost to extract hydrocarbons and improving the social license of hydrocarbon extraction. Painted Pony has recently achieved success in optimizing seismic inversion results to meet these goals with the use of Super Attributes - a representation of the combination of several seismic attributes in one seismic volume. Painted Pony has only scratched the surface in applying geophysics to non-geophysical challenges, but aspires to inspire others to continue down this path and embrace the role of the Modern Geophysicist.