

## **CSEG Technical Luncheon**

**October 3, 2023**

### **4D joint inversion and “closing the loop” for production history matching and forecasting**

**Presented by Kelly Wrobel, Woodside Energy**

#### **Talk Abstract**

The Atlantis field in the Gulf of Mexico has quite an extensive history of production and a still promising future. One reason for its success is a series of solid seismic data acquisition and processing programs throughout the years, including the acquisition of several 4D data sets. It is important that all this data be utilized in such a way that every bit of information can be extracted from it. The study described here is an integrated 4D inversion and Close-the-Loop project performed by Qeye and Woodside Energy that required participants in fields including Geology, Petrophysics, Rock Physics, Geomechanics, Geophysics, Reservoir Engineering and Computer Modeling. This integration of disciplines has resulted in a set of data-driven products that enables an advanced understanding of the depletion of the field and aid in development choices. The workflow presented here incorporates the key steps of 4D seismic joint inversion and seismic/reservoir simulation Close-the-Loop that are crucial to quantitatively leverage 4D seismic information efficiently in a field such as Atlantis.

#### **Biography**

Kelly was born and raised in Massachusetts. She moved to Texas in 2007 when she got a job at ExxonMobil. She received a Sc.B. in Mathematics and a Sc.M. and a Ph.D. in Geological Sciences, all from Brown University. Kelly worked for ExxonMobil from 2007-2014 as part of their core GAPS (Geophysical Applications) group. Kelly moved to BHP (now Woodside Energy) in March of 2014 and now works as their primary geophysicist for Gulf of Mexico non-operated assets.