

Saskatchewan Geological Society Talk

Friday, November 21st

Lisa Towery, AAPG Distinguished Lecturer

**Appropriate Reservoir Modelling: Integration across
Subsurface Disciplines**

**Ramada Hotel, 1818 Victoria Avenue, Regina
Poplar Room, 3rd Floor**

**Lunch: 11:45 a.m.
Meeting talk: 12:15-1:00 p.m.**

**For lunch the cost is:
Members: \$15.00
Student Members: \$5.00
Non-Members: \$20.00**

For those not having lunch the talk is free

**Please contact Murray Rogers at murray.rogers@gov.sk.ca or 306-787-1932
before noon, Tuesday, November 18th if you are going to have lunch.**

If you want lunch please RSVP or you may go hungry.

Appropriate Reservoir Modeling: Integration across Subsurface Disciplines

With advances in digital technology, use of integrated reservoir models has become commonplace for making informed reservoir development and management decisions. Yet even with faster computers, one of the biggest challenges associated with such modeling is to deliver a model appropriate for the business objective in a timeframe such that it can inform the relevant decision. There are a number of factors which contribute to this challenge. First, some models are better suited for addressing particular business objectives than others. For example, a framework model complemented by benchmarking may be used for early life volumetric estimates for screening, whereas a cellular full-field model may be better for longer-term depletion strategies. Second, the complexity of the reservoir itself will drive the design and techniques used to characterize the reservoir. Given typical time constraints, it is often important to include only the necessary detail. Third, primary data sources typically used to construct a reservoir model include core, wireline logs, outcrop analogues, and seismic data and interpretations, all of which are measured at different scales. Consequently, re-scaling is performed on source data, plus the model itself is often re-scaled for flow simulation. Finally, additional information is frequently acquired during model construction or shortly thereafter. This requires either flexibility of the model to incorporate the data, or a freeze date after which no additional information will be incorporated until after delivery of the model. Building useful models requires integration across a variety of disciplines, including geoscience, engineering, and petrophysics, throughout the entire life-cycle of the model. From initially framing the problem, through planning, building, and delivering the model, to iterating through updates or additional models, this presentation poses suggestions for delivering appropriate reservoir models as an integrated subsurface team.

Lisa M. Towery Biography

Lisa Towery has been in the oil and gas business for over twenty years. For the majority of her career with BP, her work has focused primarily on geological reservoir modeling. Lisa has been involved with numerous integrated teams delivering reservoir models across a variety of geological settings, including deepwater turbidites, paralic, and carbonates, some of which are unconventional reservoirs. Such projects varied across the value chain, from appraisal in the Gulf of Mexico, through development in the North Sea, to production in Alaska. As a Technical Advisor with BP, Lisa provided guidance on geomodeling efforts across the globe. She also represented BP externally on RESQML, an industry-wide special interest group focused on delivering a reservoir model data-exchange standard. In addition to her reservoir modeling activities, Lisa led the deployment of a subsurface technical development program at BP. Lisa is currently a senior geologist leading two teams of geoscientists in BP's Reservoir Development Technology, focused on geomodeling, sedimentology/stratigraphy, petroleum systems, petrophysics, and biostratigraphy. She holds a M.Sc. from the University of New Orleans and a B.Sc. from the University of Southern Mississippi, both in geology. She is a member of AAPG, SPE, and SPWLA, and is an AAPG Certified Petroleum Geologist.