



Industry-Driven Advances in Predictive Earth Systems Modelling: Addressing the Paleotopography Challenge in 4D

Allie Kennedy Thurmond

Statoil; Bergen, Norway

AAPG Distinguished Lecturer

When evaluating paleosystems, there will always be a shortage of data constraints and a surplus of plausible geological scenarios for a basin evaluation. Modelling paleosystems with constraints from the modern has been used as a successful approach to better understand petroleum systems. However, as geological data spans both time and space and paleosystems are influenced from lithosphere to atmosphere so should the modelling approach. The modelling approach should be represented through geological time and encompass the effects and implications of the whole earth system. Modelling paleosystems as an integrated earth system requires the integration of tectonics, paleoclimate, source distribution and sediment routing which are all rooted in the prediction of paleotopography. Unfortunately, prediction of paleotopography comes with high uncertainty and is often poorly constrained. Source to sink concepts address the fundamental principles that influence paleotopography but the challenge exists on how to integrate these concepts into meaningful methods for the prediction of petroleum systems. These challenges are being met through industry-driven advances in novel iterative workflows and integrated technology that evaluates the petroleum system holistically through geologic time. Iterative workflows and integrated technology allow for the efficient evaluation of multiple geological scenarios to better constrain the uncertainties in the prediction of petroleum systems.

About the Speaker:

Allison (Allie) Kennedy Thurmond is currently a manager in Statoil for research and development in basin and petroleum systems analysis in Bergen, Norway. She works with a team of talented researchers spread throughout Norway and in Houston who are developing cutting edge technologies in topics such as basin analysis, geodynamics, petroleum systems analysis and pore pressure and seal.

She graduated with a B.Sc., M.Sc. and Ph.D. in Geosciences from the University of Texas at Dallas where her graduate focus included structural geology, tectonics, remote sensing and GIS. Her Ph.D. work involved understanding the structural / tectonic evolution of the Afar Depression, Ethiopia through field work and remote sensing (i.e. radar interferometry).

Prior to joining Statoil (formerly Norsk Hydro) in 2005, and throughout her undergraduate and graduate education, she worked for the US Department of Commerce for more than a decade as a Supervisory Survey Statistician.

AGS Dinner

Date/Time: Friday, April 11, 6:30 pm – 8:30 pm

Program: Industry-Driven Advances in Predictive Earth Systems Modelling: Addressing the Paleotopography Challenge in 4D

Speaker: Allie Kennedy Thurmond, Statoil; Bergen, Norway
AAPG Distinguished Lecturer

Place: BP Energy Center

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Beer and wine available

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