EGI Energy & Geoscience Institute
AT THE UNIVERSITY OF UTAH

Since 1972

Lauren Birgenheier, PhD

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Research Interests

- Sequence stratigraphy
- Sedimentary geology
- Geochemistry
- Conventional and unconventional reservoir characterization

Dr. Birgenheier is an Associate Professor specializing in sedimentology, sequence stratigraphy, and geochemistry as applied to unconventional reservoir characterization. She joined EGI in 2008, and for the last 12 years has been in the Department of Geology & Geophysics.

She completed her Ph.D. in 2007 at University of Nebraska-Lincoln, focused on resolving the sedimentologic, stratigraphic, and geochemical record of the late Paleozoic ice age of eastern Australia. She received her B.A. in geology from Colorado College in 2002.

Dr. Birgenheier has several active interdisciplinary research projects focused on shales.

Mancos Shale

Dr. Birgenheier is the Principal Investigator of the University of Utah team of a current RPSEA (Research Partnership to Secure Energy for America) funded project – Cretaceous Mancos Shale, Uinta Basin, Utah: Resource Potential and Best Practices for an Emerging Shale Gas Play, awarded to the Utah Geological Survey in partnership with the University of Utah and Halliburton. The project uses an integrated geologic-geophysics-engineering approach to identify horizontal targets, model, and provide best stimulation and completion practices for the emerging Mancos Shale gas play in the Uinta Basin.

Green River Formation

Another current project aims to develop a sequence stratigraphic model of the Green River Formation in the Uinta Basin, to be used towards understanding the evolution of lacustrine systems, depositional controls, and more effective oil shale and shale oil development in the basin. More broadly, this ancient lacustrine system is an analogue, aspects of which can be applied to lacustrine petroleum systems worldwide.

Additional research interests

Dr. Birgenheier's research lies at the intersection of sedimentary geology and geochemistry, with emphasis on sedimentology and sequence stratigraphy, specifically in fluvial, paralic, shallow marine, and lacustrine systems. Lauren is particularly interested in understanding the depositional controls on facies heterogeneity and stratigraphic stacking patterns in mud-dominated systems or shales. Lauren believes strongly in integrating our sedimentary and geochemical investigations with other disciplines; specifically 3-D seismic analysis, geomechanics, and production engineering, in order to address key unconventional resource exploration and production challenges.

For more information about Lauren's research: *www.reservoirs.earth.utah.edu*.

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