

## The stratigraphic and structural architecture of Devonian gas shales of the Appalachian Basin



<b>Type:</b>	Field
<b>Instructors:</b>	Terry Engelder
<b>Location:</b>	Marcellus
<b>Length:</b>	5 days
<b>Time:</b>	June 17-21, 2019

**2019 preview, details to be announced**

Our objectives are to show the evidence for the strong correlation between fracture development and sequence stratigraphy in unconventional reservoirs of the northern Appalachian Basin and then to demonstrate the tectonic overprint of the Alleghanian Orogeny on these unconventional reservoirs. This field trip will visit the stratigraphic succession of the Catskill Delta as drillers might encounter it starting with several Upper Devonian shale formation and end with the Middle Devonian Marcellus gas shale. The trip will start on the Appalachian Plateau, a more distal region of the Catskill Delta and end in the Appalachian Valley and Ridge where outcrops the Middle Devonian Marcellus Formation are representative of the more proximal portion of this black shale.

### Instructor



**Terry Engelder, PhD**

**Terry Engelder**, a leading authority on the recent Marcellus gas shale play, holds degrees from Penn State B.S., Yale M.S. and Texas A&M, Ph.D. He is currently a Professor of Geosciences at Penn State and has previously served on the staffs of the US Geological Survey, Texaco, and Columbia University. Short-term academic appointments include those of Visiting Professor at Graz University in Austria and Visiting Professor at the University of Perugia in Italy. Other academic distinctions include a Fulbright Senior Fellowship in Australia, Penn State Wilson Distinguished Teaching Award, membership in a US earth science delegation to visit the Soviet Union immediately following Nixon-Brezhnev ente, and the singular honor of helping Walter Alvarez collect the samples that led to the famous theory for dinosaur extinction by large meteorite impact. He has written 150 research papers, many focused on Appalachia, and a book, the research monograph "Stress Regimes in the Lithosphere". In the international arena, he has worked on exploration and production problems with companies including Saudi Aramco, Royal Dutch Shell, Total, Agip, and Petrobras.