

# Thinking 'Out Of The Box' – The Role Of The Geologist In Meeting Future Energy Demand

By Robbie Gries, President of the American Association of Petroleum Geologists (AAPG).

The demand for oil and gas in the next century will greatly increase in the next few decades and reserves are limited. Converting vast amounts of 'undiscovered' resources into proven reserves will require geologists 'to think out of the box'. This means looking at methods no one has tried before, looking for accumulations previously thought unlikely, and looking in places where others have overlooked or thought impossible.

This has never been easy, but it has been the key to giant new reserves being developed. Overturning the 'dogma' that is currently favored by explorationists with a new 'heresy' has a history of difficulty. From the "anticlinal theory" in the 1880s to sequence stratigraphy in the 1980s, geologists have had to persevere to get an idea tested. The latest plays that have convincingly converted former 'undiscovered resources' into 'proven reserves' are basin-centered gas, coal bed methane, and sub-salt exploration. Some plays, like the early offshore Indonesian exploration, required not only creative geology but unusual deal making. Buying reserves or increasing reserves by merging with another company does not discover new oil and gas. Taking the risk to develop a new idea, to finance an unusual idea, and to drill is what will provide the supply needed in the next century.

Continued on Page 15



PESA WA President, David Cliff, holding the fish fossil presented by AAPG President, Robbie Gries. Robbie is pictured holding the PESA 'Rock' presented to her by Dave Cliff.

## Thinking "Out of the Box"

Converting Resources into Reserves requires:

- Looking for methods no one has tried
- Looking for accumulations thought unlikely
- Looking at places others have overlooked

## Coal Bed Methane



### Maury Deul

U. S. Bur. of Mines  
Work: 1966-1986

Twenty years of effort to show coal gas is commercial

## Coal Bed Methane—Amazing new Reserves

In the US alone, gas from coal bed methane has increased Reserves by 75-200 TCFG

Again...converting Resources to Reserves with "thinking out of the box"!

## Sequence Stratigraphy



### Peter Vail—

Developed global concepts of sequence stratigraphy from worldwide seismic events.

Photo with permission of AAPG

## Basin-Centered Gas



### John A. Masters

The greater Elsworth Area has reserves of 600 TCFG, a great reward for sticking with a risky idea.

## First Offshore Indonesian Discovery

Two key "out of the box" events...

- Extrapolated thin onshore sediments to the offshore...and 'imagined' them thicker...
- Negotiated the first 'production sharing arrangement' with a government

*Continued from Page 14*

**Biography**

Robbie Gries is President of the American Association of Petroleum Geologists. She is founder and President of Priority Oil & Gas LLC, a Denver-based natural gas production, petroleum exploration and development company operating in Kansas, Colorado, and Wyoming. Priority has also been instrumental in the development of a one million acre 'tight gas sand' project onshore in

Ireland and Northern Ireland, where there is no economic production to date. Partners are currently drilling a pilot project to evaluate the area.

Robbie has been active in the petroleum industry for 28 years, working initially for Texaco Inc., then Reserve Oil Inc. She has been independent since 1980. She has combined the business side of oil and gas with her passion for the science of geology, publishing over 30 professional papers. She has developed and published ideas about

drilling beneath thrust Precambrian rocks along the Rocky Mountain uplifts. In the 1980s she pioneered the discovery of a concealed and unexplored Cretaceous basin beneath the San Juan volcanic field in southern Colorado. Robbie is a Director for the Colorado Oil and Gas Association, an Honor Alumnus of Colorado State University and has a Master's degree in geology from the University of Texas at Austin where she currently serves on the Advisory Council for the Geology Foundation.