

COMMENTARY

AAPG 'Needs To Be Part of the Conversation' on Climate Change

By ROBERT YEATS

In 1926, the AAPG organized an international conference in New York on the continental drift hypothesis of Alfred Wegener, as described in his book, "The Origin of Continents and Oceans," first published in 1912.

Most of the papers presented were in vigorous opposition to continental drift, especially among American geologists. The only scientists who embraced Wegener's hypothesis were from South Africa; they argued that continental drift explained their observations, including comparisons with other continents in the Southern Hemisphere.

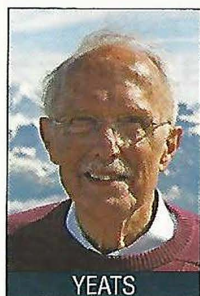
The consensus among most was that the hypothesis had no value and should be rejected. Except for the South Africans, the continental drift hypothesis was abandoned.

After this conference, a discouraged Wegener returned to his first love, exploration of the Arctic. On his fourth expedition to the Greenland ice cap, Wegener lost his life. His body is still buried there.

The problem was that critical information from the deep ocean had not yet been collected.

During World War II, because of German U-boats, the Allies began exploring the ocean floor, which revealed that it is not a featureless plain, but consists of mountains, mid-ocean ridges, trenches and great faults (see the movie, "The Hunt for Red October"). The advent of new marine survey tools led to the new global tectonics, and from there, to plate tectonics.

I worked for Shell Oil during this great change in our understanding, including a study by two Richfield Oil geologists that



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the San Andreas fault is characterized by offsets measured in hundreds of miles.

I became convinced by the evidence, even though many Shell managers who had studied under Andrew Lawson of the University of California at Berkeley didn't believe it.

Even so, Shell supervisors encouraged me to continue my investigations and to present my ideas to exploration offices around the country. I owe Shell a great debt for that opportunity.

Now, of course, plate tectonics and large-scale displacements on the San Andreas fault are widely accepted and are concepts used by AAPG members in petroleum exploration.

But now fast-forward to 2015, and geologists are now faced with a different hypothesis: climate change.

Subsurface well and seismic data give geology the third dimension, and my students used the data to map earthquake faults in California and the Himalaya. Their familiarization with subsurface data made them attractive to the petroleum industry, and many went on to successful careers in oil and gas. Salaries in geology, driven

by industry, were the highest among the sciences.

But many members of AAPG reject the research on climate change being published worldwide, even though most climate scientists accept varying forms of global warming based on analysis of ice cores from Greenland and Antarctica, melting of Arctic sea ice and a steady increase in CO₂ in our atmosphere.

Students graduating from major universities take courses in climate science as well as structural geology, geophysics and basin analysis – and some do research in the field – before accepting jobs in oil and gas.

Rejection by many AAPG members of the evidence for climate change leads to geologists talking past one another. As a result, as pointed out in Edith Allison's column in the July 2015 EXPLORER, the argument has become political.

The House of Representatives, she reminds us, has passed a bill that reduces research funding to geoscience programs by 12 percent, which will cut back on research in fields of great interest in oil and gas exploration and earthquake research – including my field, mapping of faults based

on subsurface data.

Allison quotes Rep. Lamar Smith, R-Texas, as saying, "Funding is cut for lower priority areas, including ... redundant climate research." As written, Smith's bill treats all the geosciences as "lower priority."

Congressional budget-cutting is very coarse, like attacking mosquitoes with a shotgun.

This debate leads to proposals by some academic colleagues to have university foundations divest themselves of fossil fuel stocks. We fought that off at Oregon State, as did Harvard and other universities, but the public outcry against huge political expenditures by billionaires like the Koch brothers makes targets of oil companies.

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AAPG is the largest geoscience organization in the free world, and its members know more about frontier areas now being explored than anyone else. Part of our scientific responsibility is to act as advisers, not advocates for one political stand – either for or against climate change.

AAPG needs to be part of the conversation.

I propose AAPG sponsor an international conference on climate change, including the leaders in climate research and those questioning its validity, and including the idea that higher CO₂ levels in the atmosphere are due to increased burning of fossil fuels.

AAPG members are scientists. Let's take a leadership position so that the argument is based on science and not politics. 