AAPG EXPLORER
FEBRUARY 2011

Italian ICE

Alpine adventures won't be far away

AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS AN INTERNATIONAL ORGANIZATION

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AAPG EXPLORER

PRESIDENT'S COLUMN

Facing New Frontiers – As in the Past

By DAVID G. RENSINK


RENSINK

> **Every petroleum province was once a frontier. It took someone with a vision to take the first step into the frontier.**

In thinking about the future of AAPG and the petroleum industry, it is interesting to contemplate the frontiers we currently face and those we could face in the future – but it also is worthwhile to consider the frontiers of the past.

Every milestone or significant date in our history was a major step into a frontier.

The Chinese are reported to have drilled for oil using bamboo drilling tools as early as A.D. 347. A Baku oil well was dug by hand to a depth of 35 meters in 1594. Oil from the Baku fields was exported to Persia, Central Asia, Turkey and India as early as 1647. Certainly, oil from surface seeps has been used for light and heat for thousands of years, but these were significant steps into the frontiers of exploration, production and transportation of hydrocarbons.

We think of Col. Edwin Drake's discovery near Titusville, Pa., in 1859 as the beginning of the oil business in the United States, but the country's first commercial oil well was drilled in southeastern Kentucky in 1818. Actually, the "Beatty Well" was not drilled for oil – it was a salt well that produced up to 100 barrels of oil per day. The U.S. oil frontier was identified in 1818; 1859 is when its exploitation began.

* * *

Frontiers are not only physical, they also are technical.

The first experiments to image the subsurface with seismic waves were conducted in 1921 at Vines Branch in south central Oklahoma. In 1931, Conrad and Marcel Schlumberger successfully identified the presence of oil in a formation by measuring its resistivity.

These clearly are two giant steps into a frontier – and both were made when a hand-held calculator was called a slide rule.

I certainly do not want to overlook the engineers. The Texas Company used the first submersible drilling barge to drill wells in Lake Pelto in south Louisiana in 1933. In 1947, Kerr McGee produced the first oil from the outer continental shelf in the Ship Shoal area off the coast of Louisiana.

The Arctic is one of the frontiers that will be explored in the relatively near future. The first step into that frontier was taken in 1968, when oil was discovered on the north slope of Alaska.

AAPG has taken a leadership position in this area through our Polar Petroleum Potential (3P) conference (Aug. 30-Sept. 2, in Halifax, Nova Scotia) and with this month's Arctic Technology Conference, set Feb. 7-9, in Houston (see related story, page 16).

* * *

Every petroleum province was once a frontier. It took someone with a vision – and a company willing to finance that vision – to take the first step into the frontier. That sequence will be repeated multiple times in the future, as it has in the past.

Just as the present is the key to the geological past, our historical past likely holds the key to our future.

Four Bylaws Proposals on Agenda

AAPG House delegates will consider four bylaws changes proposed by the Constitution & Bylaws Committee, according to HoD Chairman David H. Hawk.

The proposals:

- Provide for Certified Members to be a new classification of membership in AAPG.
- Provide for termination of Student membership 24 months after termination of academic enrollment and reclassification of certain students as Associates 24 months after termination of academic enrollment.
- Provide for individuals occupying certain AAPG positions to be ineligible for certain honors and awards and for nomination to certain Association positions.
- Provides for gender-neutral references "chair" instead of "chairman" and "committee members" instead of "committeemen."

The proposed bylaws have been made available to the House delegates and the membership via e-mail and is available on the AAPG website.

The C&BL Committee is chaired by Peter M. Lloyd and include members Donald D. Clarke, David J. Entzminger, Steven Goolsby, John R. Hogg and Dwight M. "Clint" Moore.

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Scan this for the mobile version of the current web Explorer.


Milano Convention Centre, site of this year's AAPG ICE.

ON THE COVER:

AAPG is Italy-bound this year, with the annual International Conference and Exhibition set Oct. 23-26 in Milan, at the Milano Convention Centre – Italy's newest and largest facility. And nearby stand the always impressive Italian Alps – a perfect complement for any geological meeting and the proposed site of several ICE-related field trips. The technical program is being finalized, but you can get meeting updates at www.aapg.org/milan2011. Cover photo by James Whatley.

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International Perspectives

Regions Tackle Challenges in 2011

INTERNATIONAL REGIONS

By VERN STEFANIC, EXPLORER Managing Editor

It's often acceptable, perhaps even fashionable, to decry the state of the industry in general and the world of petroleum geology specifically.

True, a plethora of challenges assaulted the industry in 2010, from the debacle in the Gulf of Mexico to price fluctuations to onshore environmental concerns that dogged one of the industry's biggest and brightest hopes.

But look closer at the trends of the past year and some positive signs begin to emerge.

There were signs of success in Indonesia and on Australia's Northwest Shelf; offshore Greenland continued to command the industry's spotlight, as did the continuing interest in the Black and Caspian Seas; and EVERYONE in the world now seems to know that offshore Brazil is a story for the ages.

Or, to geologists, a story *of* the ages.

And AAPG continues to be a big part of the story.

This month we continue an editorial emphasis that started last year in the EXPLORER – an effort to report throughout the year on the success stories, the challenges and the ongoing trends from all six AAPG international Regions.

We do that through contract with a growing network of leaders and news sources, but this month we do it primarily through people who lead three of AAPG's Regions.

After all, in addition to being important leaders for Association activities and structure, Region leaders by definition speak to members throughout their spheres of interest. And because of that, they're also uniquely wired to the latest industry developments.

They know who is doing what, where.

This month we focus on the state of affairs in the Asia Pacific, Latin American and European Regions, with comments from:

❒ **Joseph J. Lambiase**, finishing his second term as the Asia Pacific Region president. He is with Chulalongkorn University, Bangkok, Thailand.

❒ **Enrique Velasquez**, serving the second of two years as Latin America Region president. He is with Ecopetrol, Bogota, Colombia.

❒ **David Cook**, serving the second of two years as European Region president. Retired from ExxonMobil, he resides in Haslemere, England.

Similar reports from AAPG's African, Canada and Middle East Regions are set for the May EXPLORER.

This month, all presidents were asked the same questions regarding exploration activities, challenges and goals for the coming year.

There are 13,577 non-U.S. members of AAPG – about 39 percent of the total membership.

The top 10 countries with AAPG members (including Student totals) as of Jan. 1 are:

1. Canada – 1,685 members
2. Nigeria – 1,445
3. England – 993
4. Egypt – 922
5. China – 654
6. Australia – 649
7. Malaysia – 618
8. Indonesia – 567
9. India – 516
10. Scotland – 409

Asia Pacific Region

What's hot in the Asia Pacific Region right now?

"Several things come to mind," AAPG Asia Pacific Region President Joe Lambiase said, "including carbonate and clastic plays in eastern Indonesia and the Makassar Strait."

Other areas of note include India's KG delta and the "continued activity on the Northwest Shelf of Australia, with Carnarvon Basin gas plays."

Indeed, North Carnarvon Basin discoveries dominated the list of "Australasia" success stories last year, according to data compiled by IHS International, placing eight of the region's top 10 hits for 2010. Included in that list:

- Chevron recorded three of the North Carnarvon discoveries: Acme 1, Sappho 1 and Brederode 1.
- Woodside had four discoveries there: Alaric 1, Noblige 1, Larsen 1 and Larsen Deep1.
- Hess scored there with its Glenloth

See **Regions**, page 6

Candidate Info Available Online

Video comments by candidates for AAPG office continue to be available online at www.aapg.org.

The comments show the Executive Committee candidates talking about why they accepted the invitation to stand for an AAPG office.

Biographies and individual information for AAPG officer candidates also are available online.

Ballots will be mailed in spring 2011.

The president-elect will serve in that capacity for one year and will be AAPG president in 2012-13. The vice president-Regions and secretary serve two-year terms.

Complete election campaign rules also are available online.

The slate is:

President-Elect

❒ **Edward A. "Ted" Beaumont**, independent consultant, Tulsa.

❒ **John C. Dolson**, DSP Geosciences and Associates, Coconut Grove, Fla.

Vice President-Regions

❒ **David C. Blanchard**, El Paso Egypt Production, Lasilky, Maadi, Egypt,

❒ **Stuart D. Harker**, Circle Oil Plc, Finchampstead, U.K.

Secretary

❒ **Charles A. "Chuck" Caughey**, ConocoPhillips, Houston.

❒ **Denise M. Cox**, Storm Energy, Panama City, Fla.

Regions
from page 4


LAMBIASE

(Hess) 1 discovery.

As Region president, Lambiase has two main goals to accomplish this year:

- To increase and improve the services that AAPG provides to the Region.
- To firmly establish the AAPG Singapore office "as the hub of Asia Pacific activities, and as an important asset for AAPG."

Both helping and inspiring that effort was the recent announcement that AAPG's 2012 International Conference and Exhibition would be held in Singapore (see related story, page 34).

"The biggest challenge is to develop the regional infrastructure so that it is capable of providing enough high-quality services to all the Association's members in the geographically large, culturally diverse Asia-Pacific region," he said, "thereby allowing AAPG to grow and become recognized as the leading society for the petroleum geosciences."

Latin America Region

You don't need to think hard to predict where the hot areas will be for Latin America in 2011.

"Brazil will be the hottest exploration area in the region, due to the huge discoveries in the Santos, Campos and Espiritu Santo basins," said AAPG LA Region President Enrique Velasquez.

The Santos and Campos basins, in fact, were the locales for five of the world's most notable discoveries in 2010, according to IHS.

But the region's success stories won't be limited to Brazil.

"Colombia will continue as a country with intense exploration activity," Velasquez added, "and minor exploration activity will be conducted in Peru and Argentina."

As Region president, Velasquez has clearly defined goals for the coming year.


VELASQUEZ

"I'd like to increase the number of Student chapters, motivate members of the Region to become active, conduct an intensive Distinguished Lecturer activity and complete at least two GTWs (Geoscience Technology Workshops) in the Region," he said.

"I'd also like to improve networking with (other) geological associations, to get them to affiliate with AAPG," he said.

Velasquez proudly notes that last year was a big one for him and the Region – there was the creation of five new Student chapters, a GTW was held in Mexico and Bogota is now being considered as a candidate for a future ICE.

"Since 2010 was a very successful year for the LA Region, achieving better results in 2011 will be my main challenge."

European Region

The coming year promises to be both exciting and challenging, according to Region President David Cook – some obvious, but some perhaps surprising.

"Much attention will be focused on offshore Greenland this year," Cook said. "Last year a number of acreage awards were made in West Greenland, and several exploration wells were drilled and seismic data acquired."

It is anticipated there will be a license round in East Greenland during 2012.

"There continues to be much exploration and appraisal activity on the UK and Norwegian continental shelves," he said, including:

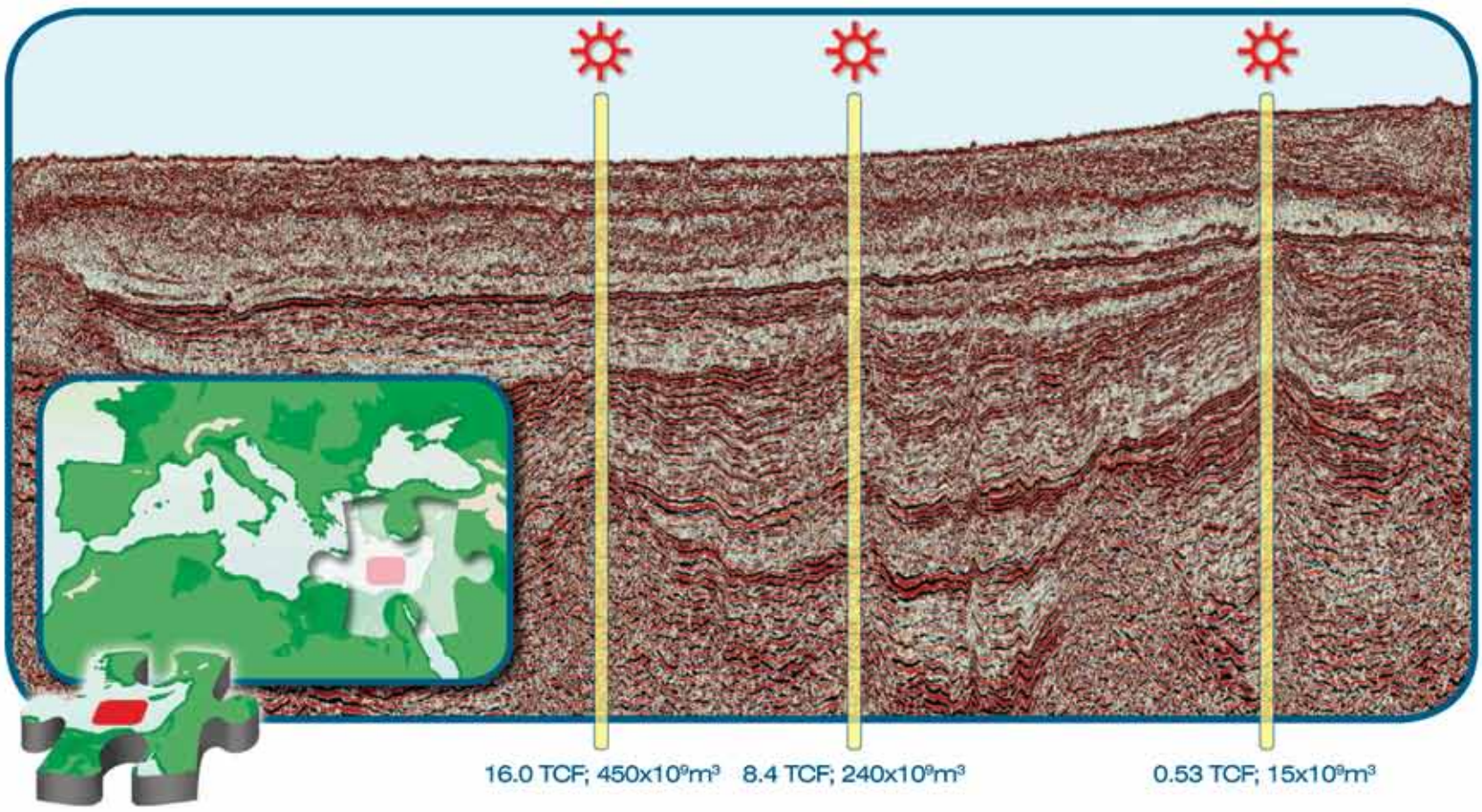
- Last October initial awards in the 26th UK Seaward Licensing Round were announced, with further awards under consideration.
- Licences were offered in the West Shetland and North Sea areas.
- Awards in Norwegian 21st Round will be announced early this year, with acreage on offer in the Norwegian and Barents Seas.
- There continues to be a large amount of acreage acquisition and divestment activity in the North Sea.

"In Eastern Europe there is a continuing interest in the Black and Caspian seas, and with exploration for unconventional resources in Germany, Poland and

See **International**, page 12

Solved: The exploration puzzle in the East Mediterranean...

...three world class gas discoveries.



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Horizontal drilling taps tight, old reservoir

Granite Wash a Wild Mix of Geology

By DAVID BROWN, EXPLORER Correspondent

If you liked what horizontal drilling and fracture stimulation did for shale gas plays, you'll love what they are doing for tight gas.

Case in point: the Granite Wash.

This decades-old tight-sands play about 160 miles long and 30 miles wide covers parts of western Oklahoma and the Texas Panhandle – and horizontal drilling there has produced some exceptional rewards lately.

Last July, LINN Energy LLC of Houston reported the results of its second operated horizontal well in the Stiles Ranch area of Wheeler County, Texas. The well tested at a 24-hour production rate of 27 million cubic feet of natural gas and 3,190 barrels of condensate, and yielded 3,530 barrels of natural gas liquids after processing.

"We believe this is the highest-rate well reported in the Granite Wash trend to date," said Arden Walker, the company's chief operating officer.

The well results caused some people in the industry to say, "Huh."

It also led LINN Energy's president to remark that the results were "considerably above what we expected."

Then in November, Apache Corp. reported that its first two horizontal wells drilled in the Hogshooter section of the Granite Wash in Beckham County, Oklahoma, each produced more than 2,000 barrels of oil and three million cubic feet of gas per day. Both were drilled to a total vertical depth of about 11,000 feet.

ONEOK Partners of Tulsa announced in December it will spend up to $240 million by the first half of 2012 on midstream projects in the Granite Wash and nearby Cana-Woodford Shale plays.

Photos courtesy of LINN Energy/Ken Childress Photography

The Granite Wash has been an active play for decades – but lately, it's become REAL active.

And Chesapeake Energy Corp. of Oklahoma City said its average gas production rate from Granite Wash wells in the Texas Panhandle had jumped from 1.77 million cubic feet a day in 2007 to almost 7.79 million cubic feet a day in 2010.

Earlier wells were vertical, often drilled through the younger Granite Wash on the way down to targets in the Atoka or Morrow. So far, LINN Energy has concentrated on the upper zones of its Granite Wash acreage in the Stiles Ranch area.

"We think the Granite Wash has significant potential," Walker said. "It's a 3,000-foot-thick zone, so there are numerous horizons to target."

The company plans to spend almost half its 2011 drilling budget in the Granite Wash, according to Walker. It expects to drill 35 gross operated horizontal wells in the play and participate in numerous non-operated wells this year, completing three to four operated wells every month.

The company has seen rates of return in the play of 50 percent to over 100 percent, he noted. LINN Energy has access to about 73,000 net Granite Wash acres – most held by production – across Texas and Oklahoma.

Hot and Cold

Operators emphasize the Granite Wash play is completely different from shale gas. But there are eerie similarities between the technologies used to drill, stimulate and complete both types of play.

An obvious similarity is the play's low-permeability nature.

"This is a tight sand, and although its permeability and porosity are low, the reservoir quality and porosity are better than those found in most shale plays," Walker said.

With larger pore throats, "the resulting high condensate yields have a favorable impact on the economics of the play," he added.

Early in the development of the Granite Wash, the industry was drilling laterals of around 2,000 feet. Advances in horizontal drilling technology have substantially increased the lateral lengths.

LINN Energy now drills 4,300-4,500 foot laterals.

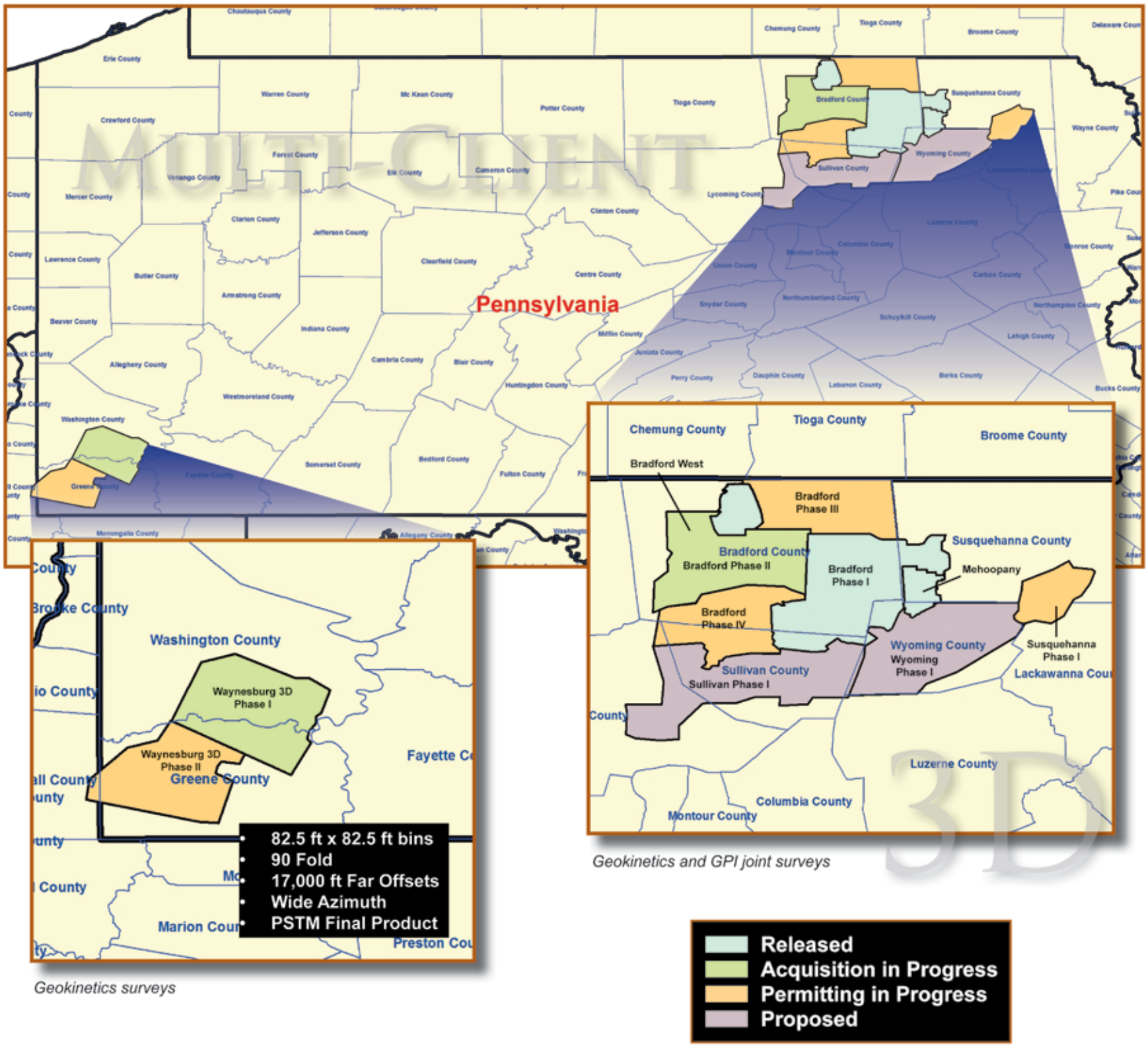
"We learn more about the Granite Wash with each horizontal well we drill," Walker noted. "It's a continuous learning process."

Granite Wash operators also tend to favor the high-volume, slickwater fracs common to many shale plays, and LINN Energy is using 10-stage to 14-stage frac jobs per well, he said.

Despite the long history of the Granite

See **Granite Wash**, page 10

You Need a Better Image of the Marcellus Shale!



Geokinetics and GPI joint surveys

Geokinetics surveys

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An active area: LINN Energy plans to spend almost half its 2011 drilling budget in the Granite Wash.

Granite Wash

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Wash (over 2,600 wells producing), its horizontal development is still in the early stages of data-gathering and analysis.

"The best targets in one area will not necessarily be the best targets in other areas," Walker said. "It will take additional geological and petrophysical analysis to better understand this trend."

Charlie Smith, senior account leader for Halliburton Co. in Oklahoma City, said he has seen the industry go through several cycles of interest in the Granite Wash. He's working to put together a panel of Granite Wash experts for an AAPG event later in 2011.

"Unless you happened to hit a very prolific section of that reservoir, you didn't do very well. And it was difficult to map from hole to hole," Smith said.

"Historically, the play would get hot and cool off, get hot and cool off," he added.

Advanced capabilities in horizontal drilling, effective stimulation and the presence of liquids all have boosted the allure of the Granite Wash.

"In my opinion, the thing that's really made the economics attractive is the advancement in horizontal drilling techniques," Smith said.

Walker's advice to anyone interested in the Granite Wash play is to "assemble a multi-disciplinary team to gain a good understanding of the petrophysics, the geology and the reservoir, and a talented execution team to drill, complete and produce these challenging wells."

Complex Geology

AAPG member G. Randy Keller is director of the Oklahoma Geological Survey at the University of Oklahoma in Norman. He called "Granite Wash" a catch-all term for many types of formations and a wild mix of geology.

"The interesting thing about the Granite Wash is that it's very hard to define," he said. "Geologically, I think of it as a garbage pail term for a lot of tight formations out there. The structures are big and the geologic histories therefore complex.

"If we think we know all about the geologic history of these areas, we're delusional," Keller added.

In the classic interpretation, he noted, the Granite Wash came from wash or detritus off the Wichita-Amarillo Uplift, producing grains that settled into the tight formations characteristic of the play.

"As you approach these big uplifts, things get a lot more conglomeratic. They don't call it the Granite 'Wash' for nothing," Keller said.

Smith said the Wash includes "high-energy areas where you have these overlapping (alluvial) fans that come down," from a mountain-front erosional process.

"You can go out in New Mexico and see some really nice events (similar to the ones that shaped the Granite Wash) happening just like that at the current time," he observed.

Local geology can produce just about any type of surprise imaginable.

"Some of the things we've drilled have essentially been boulder beds," said AAPG member John Mitchell, Anadarko Basin asset team manager in Tulsa for SM Energy Co., formerly known as St. Mary Land & Exploration.

"The Upper Morrow chert sandstones in Wheeler and Hemphill counties in Texas and Roger Mills and Beckham counties in Oklahoma are the oldest and most prolific Wash reservoirs, although they are not always recognized as Wash deposits," Mitchell said.

At the same time, the Atokan age Granite Wash in Beckham County contains a substantial amount of dolomite, he added.

Across the entire play area the Wash "changes vertically and horizontally – it's very complex. It is 50 or 70 different sandstone or conglomerate sections, developed locally," Mitchell explained.

"It's fascinating," he added, "but it's a challenge."

Similar – But Different

In addition to providing a source for the oil and gas, the interbedded marine shales have turned out to be a blessing for mapping the Granite Wash, according to Mitchell.

See **Big Play**, page 12

Big Play
from page 10

"The patterns of complexity are broken up by these high-stand shales that provide excellent markers," he said.

But the play is distinctly different from shale gas plays, Mitchell observed.

"We have more storage than shales, I think," he said. "It is a sandstone, a conglomerate. We do have more porosity."

While the need for water supply for high-volume fracs is similar to shale plays, operators in the Granite Wash can see more injected water coming back from a formation, he said.

"The shales tend to absorb a lot of water because they're so desiccated. In the Granite Wash you tend to get a lot of load water back," Mitchell said.

"I think water management is increasingly going to be an issue," he added.

Today, the Granite Wash is already generating buzz as one of the most attractive play areas around, with favorable economics thanks largely to the presence of condensate, natural gas liquids and even oil.

Operators benefit from a chance for strong production, good access, a long history in states that favor hydrocarbon development and growing infrastructure.

Also, the application of advanced techniques developed for shale-gas production doesn't hurt.

"If we're successful," Mitchell said, "we'll be drilling wells out here for the next few decades."

International
from page 6

Romania," Cook added. "Exploration and development activities continue at a high level in Russia, with much interest focused on the potential of the Arctic."

As president of an AAPG Region, Cook sees some obvious goals to tackle in the coming year.


COOK

"The European Region has over 3,100 members, but only 36 percent of these are Active (AAPG) members, and the European Council aims to increase this proportion," Cook said. "We are making every effort to expand both individual and corporate membership – particularly in Eastern Europe.

The foundation of the membership drive is through the creation of Student and Young Professional Chapters.

"Currently there are 30 active Student Chapters and two Young Professional Chapters in the Region," he said, "and it is expected that these numbers will grow during 2011.

"The key to increasing membership amongst professional geoscientists is through broadcasting benefits, products and services," Cook said.

Additionally, the Region plans to hold more educational events, GTWs and small subject-specific conferences.

"We are also identifying more European geoscientists to take part in an expanding Regional Lecturer and Visiting Geoscientist program," he said.

But for every goal there seems to be an equal component of challenges.

"One of the major challenges we face is the proliferation of workshops and conferences by professional and commercial organizations and competition for particular topics, such as unconventional resources," Cook noted.

"To mitigate this, the European Region is planning this year to hold a conference with the Geological Society of London on carbon dioxide storage from a geological perspective," he said "and we will investigate other opportunities to hold joint events in the future."

On the membership front, the Region's biggest issues are retaining students as they graduate into the profession and encouraging Associates to become Active members.

"It is hoped that the creation of Young Professional Chapters will help with the former," Cook said, "and encouraging greater involvement with the AAPG, the latter."

The Region's final challenge is in generating enough money to support the Regional Imperial Barrel Award (IBA) competition, to provide services to our Student and Young Professional Chapters and to ensure that the European Office is self-sufficient.

"This will be no mean feat, as we have unfortunately already had to turn away applications for the IBA because we do not have the funds to support the teams," Cook said. "We will need to consider alternative ways of holding the regional competition in the future in order to accommodate more teams.

"We are making every effort to hold more events that will generate funds," he said. "However, as I said, we are in competition with many other organizations."

Industry structure part of the equation

Price Affecting Gas' Present, Future

By LOUISE S. DURHAM, EXPLORER Correspondent

It might be called the recurring plague of the oil patch.

Hydrocarbon oversupply, followed by shortages, followed by oversupply …

You get the picture 'cuz you live it.

It wasn't long ago that domestic gas reserves and production of this clean burning, versatile fuel were thought to be insufficient to continue to meet demand in the United States, and prices hovered around $13/Mcf for a brief time.

Along came a proliferation of shale gas plays pretty much in tandem with a recession and, wham, natural gas supply is over the top, and prices have tanked, languishing in the $4/Mcf range.

"There's a lot more natural gas resource than we thought there was even 10 years ago," said past AAPG President Scott Tinker, director of the Bureau of Economic Geology, state geologist of Texas and professor (Allday Endowed Chair of Subsurface Geology) at the Jackson School of Geosciences at University of Texas at Austin.

"With the continuing development of unconventional gas, especially shale, it's a vast resource.

"The U.S. has led this, and the world is now following," noted Tinker, who will co-chair the forum "Taking Natural Gas Seriously: Opportunities and Challenges," at the upcoming AAPG annual meeting in Houston April 10-13.

Tinker emphasized the forum will include speakers from government and academia as well as industry.

TINKER

"There's a tremendous future for natural gas, especially globally now that companies are looking worldwide for other big basins, both conventional and unconventional."

The upside for natural gas is substantial, according to Tinker, but there are challenges to continued development – particularly in the myriad shale plays.

Long laterals in horizontal wells and multi-stage hydraulic fracturing have opened up the resource, but a lot of water is used and produced in this fracing process. In turn, the public in general has been very vocal about a number of issues, including how this might impact ground water systems.

"There's a lot of misinformation out there, and I think the industry must be transparent about what is in the hydraulic fracturing fluids," Tinker said, "and be transparent about the source of any natural gas leak in water.

"Almost without exception, this comes from surface handling of fluids or a bad surface casing job," he asserted, "and is not related to the hydraulic fracing process."

Financial Factors

Tinker noted that converting this big resource to reserves will require continuing technology development and working together with government through the regulatory process and industry and academia, which are

See **Potential**, page 16

Natural Gas Forum Set at ACE

A special forum called "Taking Natural Gas Seriously: Opportunities and Challenges," will be held from 1:15-5:05 p.m. Tuesday, April 12, at the AAPG Annual Convention and Exhibition in Houston.

Forum co-chairs are Scott Tinker, William Fisher and Svetlana Ikonnikova.

The forum will feature academic and industry leaders and is designed as a holistic overview of developments in the natural gas industry.

Varying perspectives on "below ground" reserves and production of conventional and unconventional natural gas will be followed by a global outlook of the LNG market and a discussion of energy security issues.

On the demand side, presentations will cover "above ground" economic issues and energy and environmental policy and regulations.

Speakers will include:

- **William Fisher**, professor, Jackson School of Geosciences, Bureau of Economic Geology, University of Texas at Austin.
- **John B. Curtis**, professor, Colorado School of Mines.
- **Arthur Berman**, director and geological consultant, Labyrinth Consulting Services.
- **Porter Bennett**, president and CEO, Bentek Energy.
- **Ruud Weijermars**, director of education, Department of Geotechnology, Delft University of Technology.
- **Kenneth B. Medlock III**, adjunct professor of economics, Rice University.
- **Gurcan Gulen**, research associate, BEG, University of Texas at Austin.
- **John Browning**, consultant, BEG, University of Texas at Austin.
- **Svetlana Ikonnikova**, post-doctoral Fellow, BEG, University of Texas at Austin.

Register Now for ACE Meeting Bargain

Special reduced registration fees for this year's AAPG Annual Convention and Exhibition are available through Feb. 15 – registering by that date could save you as much as $200.

The AAPG meeting will be held April 10-13 at the George R. Brown Convention Center in Houston. The theme is "Making the Next Giant Leap in Geosciences," a topic that will embrace not only domestic but also international activities, research and advances in the geosciences.

Meeting highlights will include:

- Eight special forums, covering topics that range from shale plays to business and exploration strategies to workplace conditions to "understanding the impact" of the Macondo oil spill.
- This year's Michel T. Halbouty Lecture, presented by David Lawrence, executive vice president for Shell Upstream Americas Exploration and Commercial.
- Several special luncheons, including the All-Convention Luncheon, featuring NASA astronauts Harrison "Jack" Schmitt, Kathryn Sullivan, James Reilly II and Andrew Feustel.
- This year's Discovery Thinking Forum, the fourth presentation of the AAPG 100th Anniversary Committee's program recognizing "100 Who Made a Difference."
- Nine field trips and 17 short courses.
- For the first time at an AAPG ACE, e-posters (in addition to the traditional paper posters).
- Specific activities and sessions for students and young professionals.
- A large exhibition hall, featuring the latest in cutting-edge technology and information, plus the International Pavilion.
- The opening session, including the presentation of AAPG honors and awards and featuring the presentation of the Sidney Powers Memorial Award to professor, researcher and visionary geologist John W. Shelton.

The technical program comprises 11 themes.

To register and for all details on the technical program and meeting to www.aapg.org/houston2011.

Potential

from page 14

studying shale gas resources from the basic sense, such as how the fluids and gases move through the reservoir.

Price is a thorny issue in the shale gas milieu.

"Right now, we have a short- to mid-term so-called oversupply, so prices are low and people have slowed down drilling," Tinker said. "Some of the people who got in when prices were higher and paid a lot for acreage can't afford to produce that acreage at these prices."

The industry structure figures in the shale conversation.

The shale play phenomenon originated with the small independents followed by their larger brethren, and now the majors are establishing a significant presence.

"The big boys are following and trying to put together large acreage positions that they can afford to develop over many decades," Tinker noted. "They can afford to weather lower price gas."

There's a tendency for some folks to refer to shale plays as mining or farming, given there's little risk that the resource actually is there.

"It's more about whether you can produce enough natural gas in a time frame to make money," Tinker commented. "That depends on smart technology development, investment for mid- and long term.

"We don't know yet what secondary or tertiary looks like in shale gas plays," he said. "I'm certain opportunities are there, such as re-fracturing or targeted drilling between increased well densities, and even CO_2 injection and other kinds of things. The major companies can afford to do these kinds of things over a long period of time."

Good Potential, If …

There's both pessimism and optimism aplenty about shale gas potential, depending on who's talking.

"Even when you look at it conservatively, the resource is there; it may not be robust enough to last forever as the most bullish people are saying, but it's there," Tinker emphasized. "We could see 20 to 30 years of natural gas production from shale gas systems and, in that sense, it makes a good bridge (to the future) fuel."

For example, he noted there must be a partnership between intermittent electricity generated by wind turbines and the fossil fuels, such as natural gas and coal, which can backstop the electricity. After all, you don't turn off the fossil fuel-powered plant and turn on the wind.

Tinker noted that natural gas has an ideal role to play in that partnership.

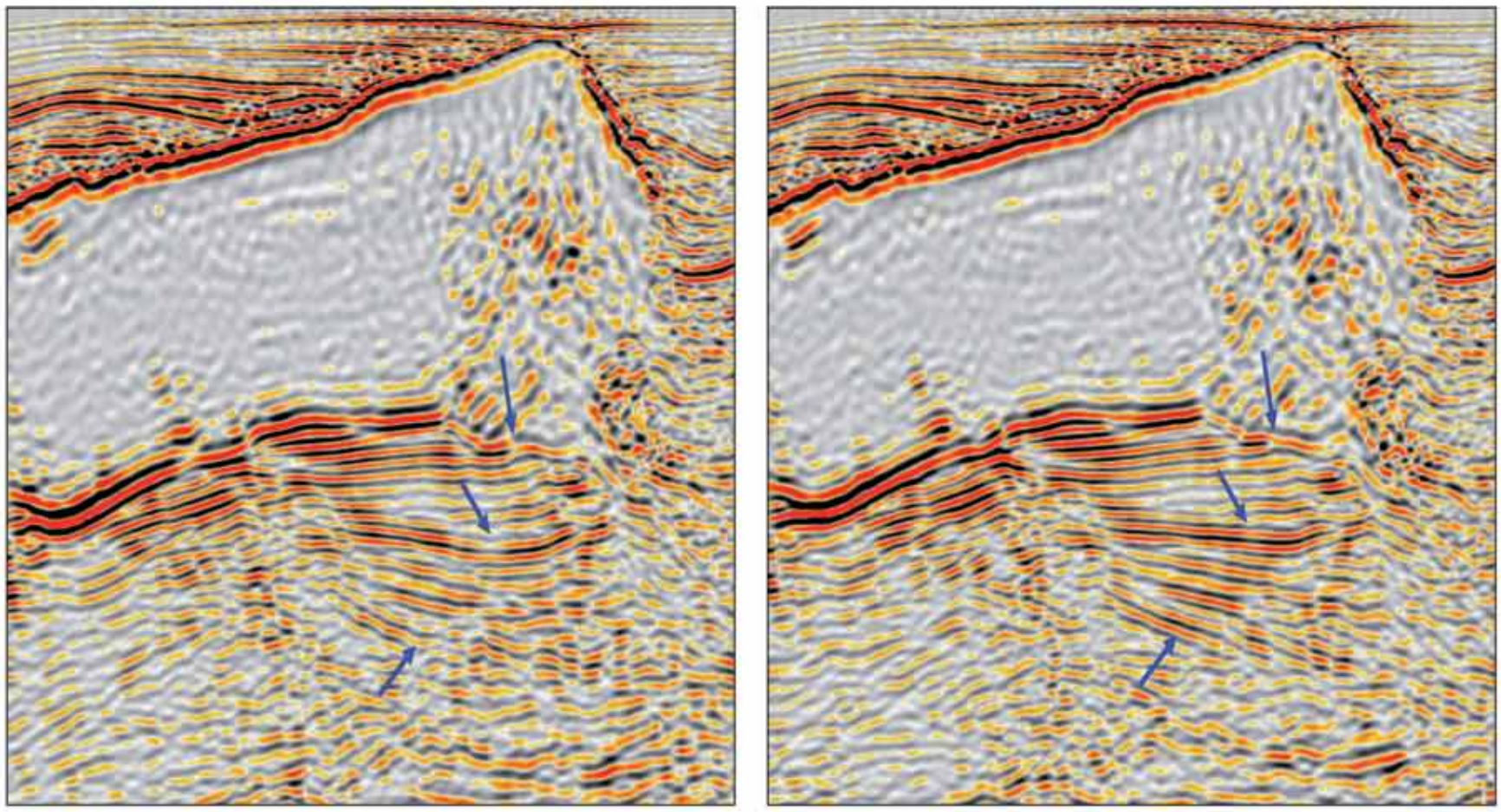
"There's a tremendous future for natural gas," he said, "especially globally now that companies are looking worldwide for other big basins, both conventional and unconventional."

He emphasized that natural gas is the most versatile of all the fuels.

For example, it can be put into vehicles as CNG, used to make electricity (which includes charging an electric car battery), burned directly for heating, cooling and cooking.

Additionally, it can be used as a feedstock to generate hydrogen, which can be used as a fuel for onboard fuel cells in a vehicle.

Imaging through Dirty Salt



Reverse Time Migration

CGGVeritas continues to pioneer Reverse Time Migration (RTM) technologies for superior imaging in areas of complex structure.

Deriving an accurate salt model is critical to subsalt imaging. The effects of "dirty salt" heterogeneities, such as sediment inclusions, interbedded and layered evaporites, have an appreciable impact on subsalt events. In recent years, our ability to define the external salt boundary has improved significantly due to the availability of wide-azimuth (WAZ) data and advances in RTM. However, dirty salt has historically been ignored during model building stages.

CGGVeritas has designed an iterative reflectivity inversion scheme to derive the velocity structure within the salt. This scheme can be used where picks from intra-salt reflections are too sparse or erratic for picking or for properly constraining tomographic updates. In these RTM depth images from a WAZ dataset, using a constant salt velocity (left) and a dirty salt velocity from reflectivity inversion (right), both the base of salt and the subsalt events are more coherent using the dirty salt velocity.

INNOVATION OF IMAGING TECHNOLOGY REMAINS THE FOCUS OF THE CGGVERITAS R&D AND SEISMIC IMAGING TEAMS.

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Editor's note: This is the second of two articles on the writer and AAPG member's recent adventures in Antarctica and South Georgia.

Shakleton's exploits awe-inspiring

Antarctic Trip a Platform for Teaching

By SUSAN R. EATON, EXPLORER Correspondent

The imposing cliffs and cascading glaciers of Elephant Island faded into the mist as we set out across the Scotia Sea, retracing Sir Ernest Shackleton's heroic, 800-mile ocean voyage from Elephant Island to South Georgia.

Shackleton's 1916 crossing took 17 days in the James Caird, a 22-foot life boat rigged with a canvas deck and small sail, and equipped with a sextant and compass.

During our three-day crossing, my fellow explorers and I were humbled by Shackleton's achievement; our vessel, the 70-meter Professor Molchanov, rolled up to 25 degrees, water crashed over her decks, and the topsides became encrusted snow and ice – one of a mariner's worst fears.

Our days at sea were full of lectures on the history of Shackleton's Imperial Trans-Antarctic Expedition of 1914-17, the identification of sea ice, the nesting habits of sea birds, climate change, oceanography, geology, plate tectonics, deep sea vents, krill, Leopard seals and photography. Resembling a boot camp for Antarctic explorers, this marathon series of lectures was delivered by the world's preeminent scientists, naturalists, historians, artists, moviemakers and National Geographic photographers-in-residence.

Participants required a good center of balance – drapes, chairs, AV screens and even lecturers lurched back and forth with predictable regularity – as the Professor Molchanov plied the roughest waters in the world. Anti-motion sickness drugs became a daily staple for all.

As one of the expedition's two geoscientists, my responsibility was to present a lecture on the geology and geophysics of Antarctica and South Georgia, providing an overview of the historical role that geoscientists have played in polar exploration.

I also discussed plate tectonics, volcanism, glaciology, recent fossil finds in Antarctica and climate change within the context of the geological time scale.

Later, on terra firma in South Georgia, fellow explorers started snapping photographs of geological outcrops, dykes and sills, weathering features, and glaciers.

To my surprise and delight, some of my colleagues were seeing the world, for the first time, through a geological filter.

Photos courtesy of SR ECO Consultants Inc. and Susan R. Eaton

Expedition scientists admire a towering ice wall in Pleneau Bay on the Western Antarctic Peninsula.

AAPG member and EXPLORER correspondent Susan R. Eaton is a geologist, geophysicist, freelance writer and extreme snorkeler who lives in Calgary, Canada. To read the Elysium Expedition's Science Report and her dispatches from Antarctica and South Georgia, or to view her photographs and videos from the Bottom of the World, go to www.susanreaton.com.

One of her sponsors for the trip was the AAPG Foundation.

A Geologist's Presence

Shackleton's Antarctic expeditions always included geologists and geophysicists.

Since the late 1800s, geoscientists have mapped the continent's mineral and coal deposits, and have tracked the position of the magnetic south pole – in fact, Shackleton's Nimrod Expedition of 1909 is widely credited with its discovery. Drifting 10 to 15 kilometers per year, the magnetic south pole lies offshore today, in the Southern Ocean.

Bottom line, it's tough being a geoscientist in Antarctica – 97 percent of the continent is covered by ice, leaving a thin continental veneer to explore on foot. Remote sensing technologies, however, including satellite, gravity and magnetic techniques, have illuminated this largely unexplored continent, providing data on isostatic rebound, sea ice thickness and the collapse of the surrounding ice shelves.

During the audition for a coveted spot on the Elysium Expedition Science Team, I pitched my vision of recreating the role of the ship's geoscientist – 100 years later – providing a unique perspective to the discussions of climate change, glaciology and oceanography.

My vision of a geoscientist-in-Antarctica was supported by numerous corporate and industry association sponsors, including the AAPG Foundation, and by generous individual donors.

View to a Krill

The 2010 Elysium Visual Epic Expedition's mission was to undertake oceanographic studies and to document the impacts of accelerating climate change, both above and below the water. During the past 50 years, the Western Antarctic Peninsula has increased in temperature by 3 C.

Experiencing more than twice the world's average warming trend, the peninsula represents an ideal outdoor laboratory to study climate change.

Because 71 percent of the planet's surface area is blanketed by oceans, the study of ocean change – including the dynamic relationship between ocean acidification and sea ice melting – is fundamental to understanding climate change.

For 19 days, the Elysium Team – comprising 57 explorers from 19 nations – scouted, recorded and documented this fragile continent, the planet's last remaining frontier. The Expedition's deliverables – a feature film, a TV documentary, a photo essay book and a permanent photo archive – will be rolled out in 2014, in conjunction with the centennial celebrations of Shackleton's journey.

The science team's task was to study the genetic distribution of Antarctic krill (Euphausia superba), shrimp-like crustaceans that are the keystone species of the Southern Ocean.

Scientists at work: The deployment of the Digital Autonomous Video Plankton Recorder (DAVPR) in the Scotia Sea.

Literally every species in Antarctica relies upon krill for its survival; failure of the krill populations could precipitate a dangerous domino effect in the ecosystem.

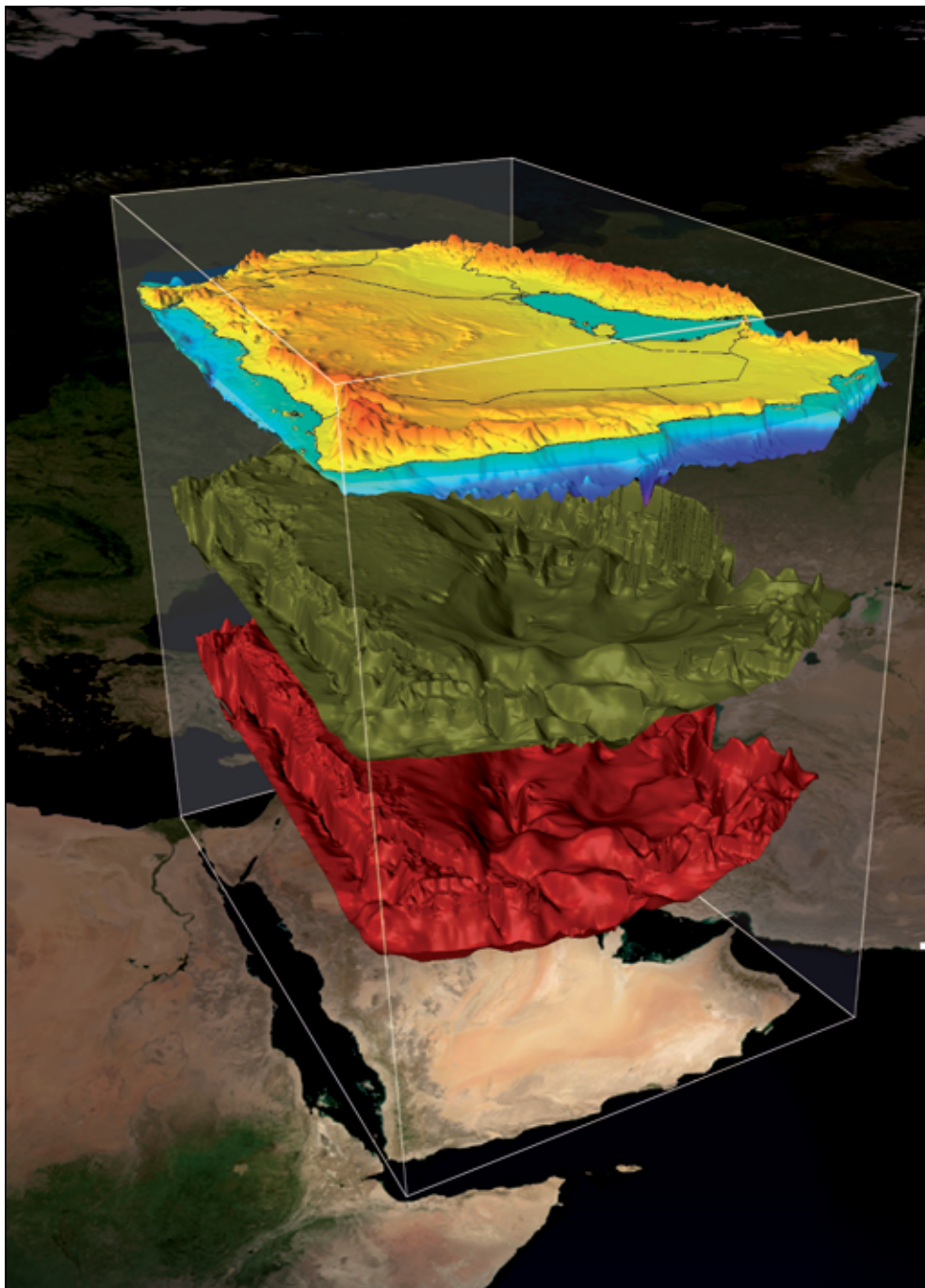
On the Western Antarctic Peninsula we witnessed – at eye level, from inflatable Zodiacs – the food chain in action, as voracious crabeater seals chased large swarms of red krill in a feeding frenzy akin to wildlife moments in the Serengeti Plain.

The Western Antarctic Peninsula's continental shelf is widely believed to house the major breeding grounds of krill. Once born, the krill are carried downstream into the Scotia Sea by the Antarctic Circumpolar Current.

According to Cabell Davis, the Elysium Expedition's chief scientist and a senior scientist in the Biology Department of the Woods Hole Oceanographic Institution, observed warming in this region has coincided with a reduced krill population and a concurrent increase in salp populations. More commonly known as "sea squirts," salps are pelagic (or open ocean) tunicates.

Although microsatellite DNA markers are being developed for Euphausia superba from the Western Antarctic Peninsula, the genetic similarity of downstream krill populations is not yet known. Similarly, scientists know little of the genetic composition of salps (Salpa thompsoni) originating from the peninsula.

See **Antarctica**, page 20



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[photo credit: NASA]

Cabell Davis of the Woods Hole Oceanographic Institution, as the Elysium Expedition's chief scientist, supervised deployment of the Digital Autonomous Video Plankton Recorder.

Antarctica
from page 18

Weighing in globally at a staggering 125 to 725 million tons of biomass, krill also represent an important commercial fishery. Just as the great whales migrate annually to Antarctica to gorge on krill, so travel the international fishing fleets that collectively capture 150,000 tons of krill every year in the nutrient rich waters of the Southern Ocean.

Rich in protein, fatty acids, lipids and enzymes, krill are used in the aquaculture, livestock, pet food and medical industries. Their Omega-3 fatty acids are also packaged as nutritional supplements.

An international body, the Commission for the Conservation of Antarctic Marine Living Resources, uses ecosystem-based management to set catch limits for the global krill fishery. Looking to the future, however, ecosystem management may face considerable challenges (and uncertainties) in an era of environmental change.

Raising the Bar

The science team commandeered about one-third of the ship's bar space, transforming it into a portable science laboratory – a situation that initially generated some grumblings among the non-scientific explorers.

The laboratory was outfitted with a photomicroscope for viewing and photographing tiny zooplankton and phytoplankton, and a light box for examining the larger specimens.

Steve Nicol, the expedition's krill expert from the Australian Antarctic Division, provided tutorials on how to classify krill, larval krill, copepods, amphipods and salps.

Equipped with new-found knowledge – and with tweezers poised – I was excited to contribute to this oceanographic research.

But no one warned me about the "robust" species of free-swimming plankton – yes, I discovered a tomopterid worm in one of the early plankton net tows. Moving its paddle-like body extensions, the tomopterid worm darted energetically around the dish.

Revisiting my invertebrate zoology background, I worked alongside the members of the science team, sorting through buckets of sea water recovered by the plankton net from depths of 148 to 216 meters. Predominated by gelatinous cocoons secreted by salps, we affectionately dubbed this aqueous mess "salp soup."

Between the science team's powers of observation and the gizmo's optical eye (see box below), we classified radiolarians, diatoms, ostracods, ctenophore jellies, copepods, amphipods, salps and worms. The DAVPR also imaged marine snow particles – decaying organic matter in the water column – which form a potentially important food source for krill in the open ocean.

Based upon analyzing the plankton net hauls and the DAVPR imaging, we observed that krill and larval krill were in short supply

See **Expedition**, page 22

Gizmo Imaged Plankton

The science team needed calm waters – an exceedingly rare occurrence in the Scotia Sea – to deploy a plankton net, a holographic camera and a Digital Autonomous Video Plankton Recorder (DAVPR) with the Professor Molchanov's crane boom. Constrained by frequent high seas, we managed to successfully deploy the equipment six times, with a bonus test run near Elephant Island. When it was determined that the DAVPR's strobe light was contaminating the holographic images, the holocamera was retired.

In total, 174,720 color images were recorded by the DAVPR, which, due to its unwieldy name and acronym, was affectionately renamed the "gizmo." The DAVPR also carried equipment to measure plankton bio-fluorescence as well as water turbidity, salinity and temperature.

Earlier this year, Cabell Davis, the Expedition's chief scientist and one of the DAVPR's inventors, deployed this real-time, non-destructive optical imaging technology in the Gulf of Mexico, photographing oil droplets and plankton in the wake of the BP Deepwater Horizon oil spill.

In the Scotia Sea, albatrosses of many species magically materialized – seemingly from nowhere – when the plankton net hit the water. Some 30 minutes later, they departed annoyed and empty-bellied, when the net containing a salp-dominated mix was hauled out of the water.

Cause and effect?

Perhaps not a very elegant scientific experiment, but nonetheless I suspect that the albatrosses were counting on a free meal as our boat deployed this unique fishing net.

– SUSAN R. EATON

Left: Steve Nicol of the Australian Antarctic Division prepares plankton net for deployment off Elephant Island. Right: Cabell Davis and Nicol review sampling data.

She Had Him At …

In conversation with Steve Nicol, the expedition's krill expert, I confided that my mother, a marine biologist, had always referred to krill as "euphausiids."

With apologies to the movie "Jerry Maguire," I had him at euphausiids.

Continued conversation revealed a surprising connection with just one degree separation – Nicol had received a degree (his doctorate) from Dalhousie University; our educations at Dalhousie had overlapped; and we had studied with the same marine biology professors.

We speculated, further, that he might have been one of my laboratory demonstrators.

– SUSAN R. EATON

Expedition

from page 20

in the open ocean. Our initial observations supported the phenomenon previously noted by Davis and his global peers: A climate warming-related increase in salps is displacing krill in the Atlantic sector of the Southern Ocean.

Samples were preserved, both cryogenically in liquid nitrogen, and in formalin. A portion of the salps and krill samples were sent to the Census of Marine Zooplankton for DNA bar-coding, to determine the degree of genetic similarity of populations distributed across the Scotia Sea. The digital and preserved samples data will be used to estimate the abundance of krill and other plankton, in relation to marine snow and hydrography.

Science Gets Even Cooler

Our return voyage from South Georgia to Ushuaia, the southernmost city on the South American continent, involved five days of sailing across the roughest seas in the world. En route, we encountered a Force 11 storm with waves cresting 15 meters in height and winds whipping at 110 kilometers an hour. When the Professor Molchanov docked in Ushuaia, we had logged 3,277 nautical miles in 19 days.

During the early part of the return voyage, the science team took advantage of calm seas. While we were processing the plankton tows, an interesting transformation occurred in the Professor Molchanov's bar: science suddenly became cool. Or cooler.

No longer focused on getting the "money shots" or on planning the logistical details of the next shore visit or dive, the Elysium explorers had some free time and were looking for interesting tasks. The scientists were swarmed by these enthusiastic explorers who queued up at the microscopes to examine and photograph krill and the plankton swimming in the salp soup.

Shrewdly reassessing our role, we moved seamlessly to mentor these scientists-in-the-making. Recognizing this transformation as a value-added educational opportunity, I gladly surrendered my tweezers and relaxed with a glass of fine Argentine Malbec.

Coaching from the sidelines, I cautioned, "Watch out for the tomopterid worms! They're small but scary critters!"

The bar-cum-laboratory had morphed into an elegant teaching platform, and the adult students were buzzing with excitement.

"The science outreach activity on this expedition was excellent," Davis said. "The interfacing of scientists with photographers, cinematographers, artists, writers and musicians was unparalleled."

The cross-pollination of scientists and individuals with diverse skill sets will, no doubt, result in numerous, multi-faceted collaborations amongst the Elysium team members. Given the right type of educational platform, this transformation process works amazingly well with the general public and with children, the geoscientists of the future.

And, as AAPG members, the teaching platforms needed to inspire today's youth can often be found in our everyday workplaces. Our platform was an amazing outdoor laboratory and a jury-rigged ship's bar. But a coffee table in your company's reception area, a three-dimensional geophysical workstation in your office or a teacher's classroom can be your platform. E

David Curtiss, head of AAPG's Geoscience and Energy Office in Washington, D.C., can be contacted at dcurtiss@aapg.org; or by telephone at 1-202-684-8225.

WASHINGTONWATCH

An Eroding Competitiveness …

By DAVID CURTISS, GEO-DC Director

In 2005 the National Academies released a report titled "Rising Above the Gathering Storm: Energizing and Employing America for a Brighter Economic Future."

The report's objective, with the bipartisan encouragement of a concerned Congress, was to assess the nation's scientific and technological enterprise and recommend specific policy steps to ensure that it would continue delivering the advances necessary to ensure U.S. competitiveness and prosperity.

To conduct the study the National Academies formed the Committee on Prospering in the Global Economy of the 21st Century: An Agenda for American Science and Technology, chaired by retired Lockheed Martin Chairman and CEO Norman Augustine.


CURTISS

The goal of America COMPETES was to provide money to academic departments and students engaged in these activities.

That committee of 20 academic and industry leaders included Defense Secretary Robert Gates, then-president of Texas A&M University; Energy Secretary Steven Chu, then-director of the E.O. Lawrence Berkeley National Laboratory; and Lee R. Raymond, then-chairman and CEO of ExxonMobil Corporation.

Congress responded in 2007 with the America COMPETES legislation to boost national science and technology R&D and education investments through fiscal year 2010.

The bill authorized a "hydrocarbon systems science talent expansion program for institutions of higher education." Hydrocarbon systems science was defined as "a science involving natural gas or other petroleum exploration, development, or production." And the goal of the program was to provide money to academic departments and students engaged in these activities.

The authorized funding amounts were not lavish. Even so, Congress never appropriated money to launch the program.

(See the January 2010 edition of this column for a review of the relationship between authorization and appropriation bills.)

Just before this past Christmas, the 111th Congress reauthorized America COMPETES, sending it to President Obama for signature.

Of particular interest to many science societies is a requirement in the reauthorized bill for the National Science and Technology Council to form a working group of federal science agencies to develop policies on the "dissemination and long-term stewardship" of data and information, including peer-reviewed articles, funded by federal money.

There is a strong desire in Washington, D.C., for federally funded research results to be broadly available to the general public. Such a move, however, could dramatically alter the business models used by both for-profit and not-for-profit science publishers – and AAPG is monitoring this process as it unfolds.

The reauthorization continues the hydrocarbon systems science program, expanding the focus areas to include "hydrocarbon spill response and remediation." It authorizes more than $30 million to be spent over three years. But it is uncertain whether appropriations will follow.

Also in 2010, members of the Rising Above the Gathering Storm Committee updated their report, observing that U.S. competitiveness had further eroded in the five years since its release. The committee's bleak conclusion was that "[T]he Gathering Storm increasingly appears to be a Category 5."

* * *

"Crisis really is the best word for this situation," AAPG member Bo Sears said about the critical helium-3 shortage in the United States in an October 2010 EXPLORER article.

The bulk of helium-3 is used for security technology, according to the article, but also has research and medical applications and is a vital component of some well logging tools used in oil and natural gas production. As such, the shortage could impact the

See **Uranium**, page 28

The Geophysical Corner is a regular column in the EXPLORER, edited by Bob A. Hardage, senior research scientist at the Bureau of Economic Geology, the University of Texas at Austin. This month's column offers insights on how to "listen longer."

GEOPHYSICALCORNER

Riding the Waves: Getting S- When Getting P-

By BOB HARDAGE

For decades, seismic analysis of subsurface geology has been limited to information that can be extracted from compressional-wave (P-wave) seismic data – but numerous geophysicists are now becoming aware of the advantages of combining shear-wave (S-wave) data with P-wave data.

The advantage, simply stated, is this: A broader range of rock and fluid properties can be estimated than what can be estimated with P-wave data alone.

The purpose of this article is to explain that it may be easier and less costly than you think to acquire S-wave data across onshore prospect areas when conventional P-wave seismic data are being collected.

* * *


HARDAGE

Seismic sources used to acquire P-wave data across land-based prospects always apply a vertical force vector to the Earth. This statement is true for vibrators (the most common land-based P-wave source), explosives in shot holes and the various types of weight droppers and thumpers that have been utilized to acquire P-wave data over the years.

When a vertical impulse is applied to the Earth, two types of wavefields radiate away from the impact point – a P wavefield, and an SV (vertical shear) wavefield.

(A minor amount of SH – horizontal shear – energy also radiates away from the application point of a vertical impact, but this S-wave mode is weak and will not be considered in this discussion.)

Two examples of the relative energy that is distributed between a downgoing P wavefield and a downgoing SV wavefield produced as the result of a vertical impulse are illustrated on figure 1. These P and SV radiation patterns correspond to different values of Poisson's ratio for the Earth medium where the vertical impulse is applied.

A surprising principle to many people, including geophysicists, is that although a vertical-impact source is considered to be a P-wave source, the SV wavefield produced by such a source is often more robust than is its companion P wavefield.

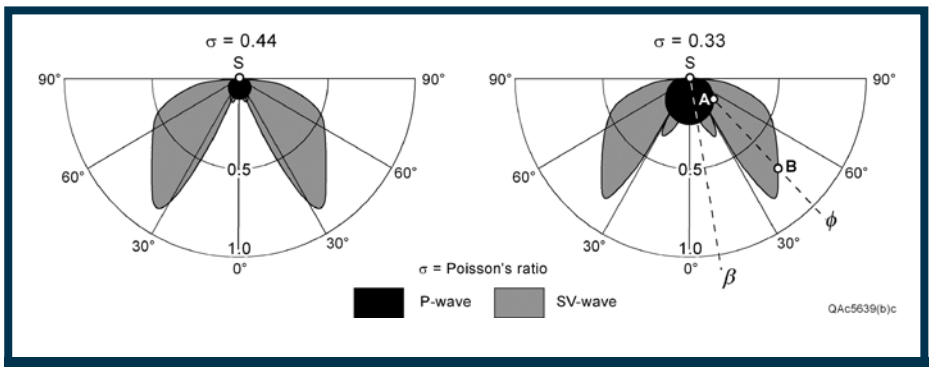


Figure 1 – P-wave and SV-wave radiation patterns produced when a vertical impulse is applied to the Earth surface at source station S. These patterns define the relative strengths of the illuminating wavefields, not the geometrical shapes of the wavefields. For example, at take-off angle Φ, the strength of the downgoing P wavefield is A, and the strength of the SV wavefield is B. The quantity σ represents the Poisson's ratio of the Earth half space.

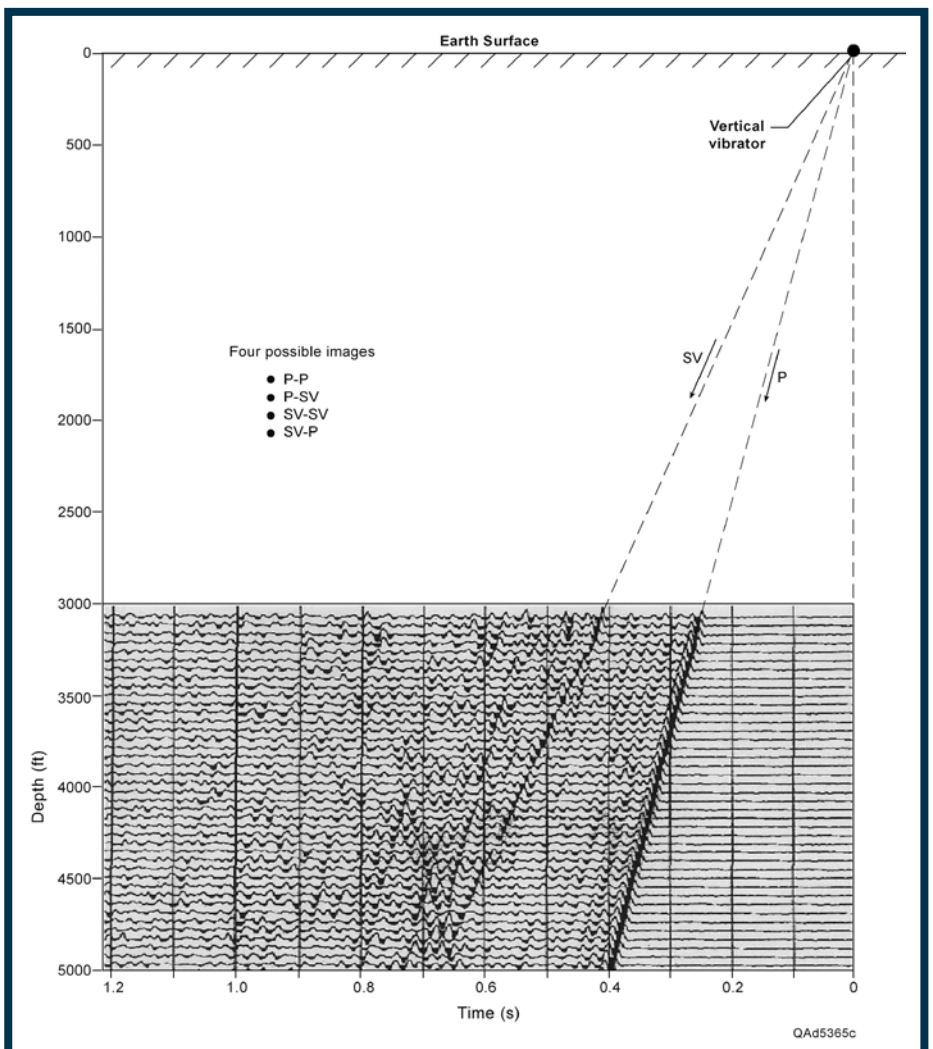


Figure 2 – VSP data showing downgoing P and SV modes produced by a vertical vibrator. In this example, the vibrator was close to the vertical well in which the downhole geophones were deployed, which would be a near-vertical take-off angle such as β in figure 1. Across the depth interval 3,000 to 5,000 feet, the velocity of the downgoing P wave is approximately 13,300 ft/s, and the velocity of the downgoing SV mode is approximately 8,000 ft/s. If long data traces are recorded, there is the potential to construct four images (P-P, P-SV, SV-SV, SV-P), where the first term defines the downgoing wavefield and the second term identifies the upgoing wavefield.

For example, to determine the relative strengths of the downgoing P and SV wavefields at any take-off angle from the source station, one has to only draw a raypath, such as dash-line SAB on figure 1, oriented at take-off angle Φ. The points where this line intersects the P and SV radiation pattern boundaries define the relative strengths of the P and SV modes in that illumination direction.

For take-off angle Φ in this example, the strength (B) of the SV mode is larger than the strength (A) of the P mode.

* * *

A real-data example that illustrates this physics is displayed as figure 2. This example is a vertical seismic profile (VSP), which is one of the best measurements that can be made to understand seismic wave-propagation physics.

Here, both a downgoing P wave and a downgoing SV wave are produced by the vertical vibrator that was used as the energy source. Either wave mode, P or SV, can be used to image geology. Both modes are embedded in the data, but people tend to utilize only the P-wave mode.

How can we begin to take advantage of the SV-wave data that conventional land-based P-wave seismic sources produce? Only two alterations have to be made in conventional seismic field practice:

- Deploy three-component geophones rather than single-component geophones.

- Lengthen the data traces to ensure that SV reflections produced by the downgoing SV wavefield are recorded. Because SV velocity is less than P-wave velocity by a factor of two or more, SV data traces need to be at least twice as long as the traces used to define P-wave data.

These alterations can be done with minimal cost, and the potential benefits of acquiring two S-waves (P-SV or converted shear, and SV-SV or direct shear) rather than just P-wave data can be immense.

Our profession needs to utilize longer data traces when acquiring all land-based seismic data.

Uranium

from page 26

U.S. oil and natural gas industry.

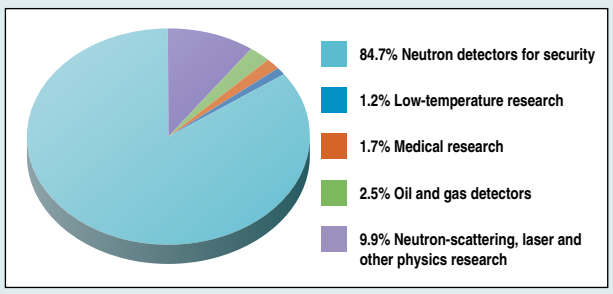
The U.S. Department of Energy (DOE) manages the nation's helium-3 stockpile, and DOE's office of oil and natural gas is responsible for allocating the 1,000 liters of helium-3 available for oil and natural gas uses in the current federal fiscal year (FY2011) – and is trying to better understand needs in FY2012.

To do so it is reaching out to the oil and natural gas community, inviting public comments and input.

In a December 7 notice published in the Federal Register, DOE asked for "information to improve its understanding of the need for helium-3 and the diversity of the user community so that it can tailor its allocation process to best support the efficient domestic production of oil and natural gas."

Specifically, the DOE is looking for information on:

- Uses of helium-3 in the well logging industry.



- Volumes of helium-3 needed over the next two years.

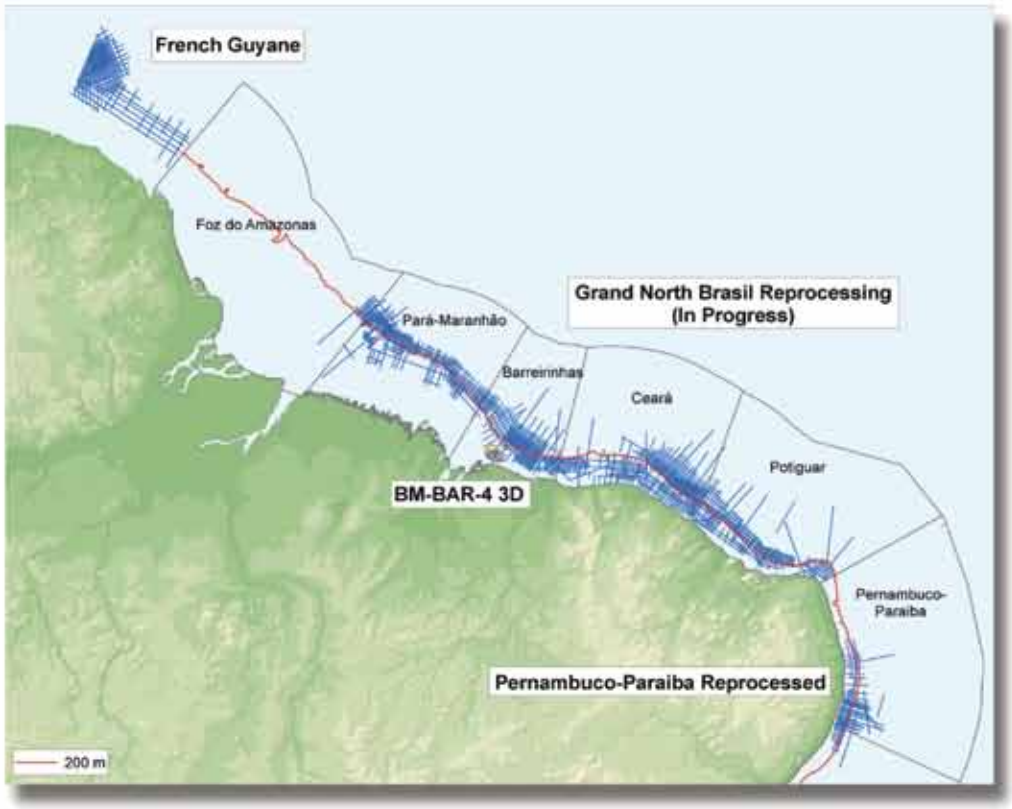
- The ability to recycle and reclaim helium-3 from neutron detectors no longer in use.

- What quantity of a company's helium-3 allocation would be used outside the United States.

Submit comments by e-mail to Edith Allison (coincidentally, an AAPG member), at Edith.Allison@hq.doe.gov), with "Helium-3 Request for Comments" in the subject line.

The official deadline to submit public comments was February 1, but DOE has indicated willingness to accept comments through February 15. I urge you to respond to this request to help DOE better understand the industry's helium-3 needs.

WHEN **QUALITY** COUNTS...



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Historical Highlight: Nelson Field

An 'Enterprising' North Sea Discovery

By HANS KRAUSE

In 1973 British Gas discovered the Wytch Farm oilfield in Dorset, England, which, with its offshore extension, became Europe's biggest "onshore" oilfield.


KRAUSE

Then-Prime Minister Margaret Thatcher asked her energy secretary, Peter Walker, what state-owned British Gas was doing with an oilfield, and said that it must be sold to the private sector, which they did. Soon after she found out that British Gas also had some oil interests in the North Sea, operated by Amoco – and she said they also should be sold.

Walker then bravely suggested that these North Sea interests, which included minority stakes in five commercial oilfields and a small stake in 19 other northern and central North Sea blocks, might form the basis for a new British oil company.

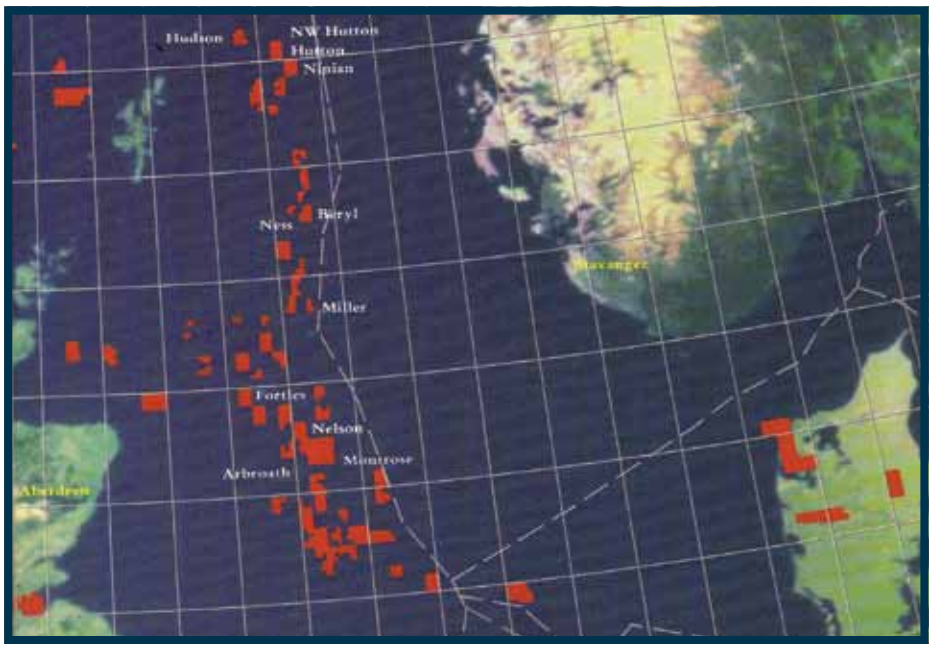
"Jolly good idea!" Mrs. Thatcher reportedly said, "and it shall be called Enterprise Oil."

Thus in 1983 was born a remarkably successful company that its employees proudly dubbed "the world's greatest independent oil company."

AAPG member J. Myles Bowen, who in April will receive AAPG's Pioneer Award at the Annual Convention and Exhibition in Houston, was Enterprise's second employee – and on April 1, 1984, he was appointed exploration director.

Bowen quickly set about staffing his department and designing a daring and aggressive exploration-intensive business strategy. The company's activities began in the British sector of the North Sea and later were expanded to Norway, Vietnam, Italy, Malaysia, Brazil, the Gulf of Mexico and six other countries.

Enterprise's successful first two years of farm-ins and small company acquisitions were to be topped by a venture that became headline news: the Nelson discovery in North Sea Block 22/11.



A History-Based Series

This Historical Highlights article is the first of an EXPLORER series that tells the stories of how specific discovery wells came about, and key concepts and technology events that shaped the science and profession.

The series celebrates human ingenuity, cleverness and perseverance – or simply, luck – and emphasizes anecdotes and the human-interest side of the E&P profession.

The series is the brainchild of Hans Krause, a consultant in Caracas, Venezuela, and formerly of PDVSA and vice president of Shell Venezuela. Krause is an AAPG Honorary Member, Distinguished Service Award winner and chairman of the AAPG History of Petroleum Geology Committee.

Krause can be contacted at aapg.hopg@yahoo.com.

Four Duds …

UK North Sea Block 22/11, on the Forties Montrose High in the Central Graben area about 200 kilometers east of Aberdeen, Scotland, had seen a history of unsuccessful exploration involving five companies drilling four inconclusive wells over two decades.

The first well, 22/11-1, was drilled by Gulf in 1967 and had the Permian Rotliegendes Formation as its objective – which was found wet. Electric logs, however, indicated a "ratty" hydrocarbon-bearing uppermost Paleocene sandy

Continued on next page

Mike Whyatt, Myles Bowen and Dave Rhodes, on the rig during the initial production tests.

Continued from previous page

interval with a gross column of 178 feet that on an open-hole drill stem test produced only water and oil-cut mud.

The well was not tested further.

▸ Some five years later, in 1972, Conoco drilled a second well in the block that only found oil shows in the "ratty" Upper Paleocene sands.

▸ Eleven years later Conoco drilled a third well that was also abandoned as a dry hole.

The chain of events that led to the discovery of the Nelson Field started in 1985, when Enterprise Oil and its partners carried out a detailed seismic survey over the Montrose Field and its undeveloped neighbor Arbroath in the block immediately south of Block 22/11, with the objective of convincing the authorities that the latter was a separate field, because that had important consequent tax benefits.

The resulting interpretation proved conclusively the two fields were separate Upper Paleocene Forties Formation accumulations, restricted laterally within NNW-SSE trending sand lobes and separated from each other by shaly "inter-channel" zones.

In 1985, as these studies continued, Enterprise entered into discussions with the Conoco/Chevron/Britoil group with a view to earn farm-in equity by drilling wells in nine of their blocks.

One of the blocks that Enterprise Oil had insisted be in the deal was 22/11.

The only data available to Enterprise Oil on the block was the Gulf well 22/11-1, plus a very old regional seismic well-tie line running from the UK coast to Norway passing across Gulf's well. Geophysicist Dave Rhodes and geologist (and AAPG member) Mike Whyatt, working on the Montrose/Arbroath field separation issue, studied it, immediately saw the similarity and concluded that Gulf's well 22/11-1 had penetrated a shaly Upper Paleocene "inter-channel" sequence – with good seismic evidence of thick channel sands immediately to the east and west.

The farm-in agreement for Block 22/11 dictated that Enterprise drill a well in the block's southwest corner to test a decent Jurassic Fulmar Formation prospect. The well, the fourth in the block, was abandoned, as the objective was wet – but it did find a well-developed, yet wet, Upper Paleocene sand section.

… And a Gusher

Having drilled this commitment well, Enterprise then gained access to all the existing data – including a 3-D survey shot by Shell over the prospect, which reinforced its concept of a major Upper Paleocene exploration objective in the northeast corner of Block 22/11.

Enterprise, now with a 30 percent stake, informed the partners of its ideas about the first well on the block and proposed that the partnership re-drill the closure first tested by well 22/11-1 – but this was rejected by the partners.

It was at this moment that Enterprise made the strategic decision to concentrate its efforts on Block 22/11, and Bowen initiated a complex series of individual and discreet acreage swap negotiations with the other three companies. By early December 1987 Enterprise had executed all the necessary swaps and achieved its objective of controlling 100 percent of Block 22/11.

Enterprise Oil was so certain they would have a commercial discovery that they constructed a four-well template for the drilling of one deviated well each into each of two sand lobes, plus the option of drilling two further wells from the same location.

Well 22/11-5 was spudded on Dec. 19, 1987; well 22/11-6 was spudded three days later.

Both wells found the Forties Formation oil bearing, and the geoseismic model was borne out when well 22/11-5 came in at 6,720 bopd of 40.1 degree API oil and well 22/11-6 tested 10,224 bopd.

The field's discovery was announced in March 1988, and a month later the Shell/Esso partnership proved the extension of the accumulation into adjoining Block 22/6a.

After Enterprise's successful production tests the question arose as to what to name the new field. Bowen was in the office of CEO Graham Hearne, overlooking Trafalgar Square with Admiral Horatio Nelson's statue in its center, and posed the question.

Graham just pointed out the window and said, "Look no further!"

Thus was named a field of about half a billion barrels of oil, one of the largest discoveries of the decade – an effort that capped a complicated series of business maneuvers that the UK daily newspaper Independent later described as "little short of brilliant."

In 2002 Enterprise Oil was acquired by Royal Dutch Shell for $6.2 billion – a bid that its board of directors decided represented good value and recommended the shareholders to accept, which they did.

It marked the end of an independent operator that had shown a smaller company could have – and creatively apply – the technical and managerial expertise to outwit major ones. E

Bowen due Pioneer honor

Career Included 'Rough Stuff'

By BARRY FRIEDMAN, EXPLORER Correspondent

It isn't just that Myles Bowen never expected to win this year's AAPG Pioneer Award; it's that he never expected to be considered.

"I really feel that I hardly qualify," he says, citing his shortcomings.

"Almost all of my work," he says, "was 'in house' and my name appears above relatively few publications."

Fortunately, the Pioneer Award cares more about vision than vitae. Specifically, it is given to longstanding AAPG members who have made significant contributions to the science of geology.


BOWEN

And to that extent, whether he agrees or not, Myles Bowen is the perfect choice.

His career began in 1954, when he joined Royal Dutch Shell and almost immediately was sent to Borneo – missing, he says, the usual Shell training.

"Being unmarried, I got all the rough assignments," he recalled, "first of which was being in charge (solo) of 80-odd laborers on a 'pitting/auguring' survey, not speaking a word of Malay, the local language."

It was basic survey work, but there were no maps, only a few air photos and plenty of something else.

"There were leeches," he says, as well as shooting rapids and, he adds for emphasis, "more leeches!"

And how long did he endure that?

"Just over three years," he said, "with only a four-week break."

Lessons Learned

He then was sent to Venezuela, a place whose current political situation, he says, makes him want to weep. And even though his job there was frustrating (the government had already decided to nationalize the petroleum industry), Bowen said life – his personal life, anyway – was good. Mostly.

"The locals were great," he said, "but my bosses were not."

It was in the early 1960s, though, when Bowen began hitting his stride. He joined Shell's exploration team in Nigeria, where his team had a remarkable run of good results.

Bowen, who enjoys talking about his career pre- and post-marriage, says his time in Venezuela had a unique brand of challenges.

"Still unmarried, so more rough stuff," he says of the survey work he did.

> **"The prevailing view of our bosses in early 1969 was that most of the gas in the southern North Sea had been found ..."**

"Very rough, drug runners and very unfriendly Indians."

And, oh yeah, "Again, no maps!"

It was a time he said when his knowledge of hydrocarbons could be summed up in one word: "Nothing."

But he learned. So much so, he says, "Our success ratio beat the appraisal boys."

It was later in the decade, though, that Bowen made what many think is his mark on the profession.

"The prevailing view of our bosses in early 1969 was that most of the gas in the southern North Sea had been found and that no oil would be found in the north," he recalled.

Bowen said his new staff in London, however, was not so pessimistic, so a big – and to some, surprising – decision was made.

"In the UK Third Round we decided to apply for a huge tilted fault block hundreds of miles north of the current activity in 'impossibly deep water,'" he said.

See **Bowen**, page 34

'A nose for finding ...'

To David Scoffham, director of New Zealand Oil & Gas Ltd., Myles Bowen was more than just a shrewd and pragmatic geologist.

He was, according to his old friend, a true "pioneer."

Having worked with Bowen at Enterprise Oil, Scoffham said Bowen was "good at spotting business opportunities beyond the strict technical domain.

"He had a nose for finding oil and gas."

And Scoffham says there was a reason for this.

"Myles' long career in the international division of Shell took him to far-flung oil provinces such as Nigeria and Venezuela," Scoffham said, "so he had seen a lot before working in the UK."

As much as anything, Scoffham found Bowen friendly, good at delegating, open-minded and understanding of what Scoffham calls "the boundaries of deal-making."

But only with those who came to the table ready to deal.

"He did not suffer fools readily and was never afraid to speak his mind to defend his beliefs," Scoffham recalled.

"He could be 'crusty' at times!"

Persistent, too.

"Myles 'head-hunted' me from Shell to join Enterprise Oil … and persisted for a full year," he said. "This was probably the most difficult decision I ever made – a choice between two very good prospects."

The result?

"I did not regret my choice," he said. "In fact, it was a real privilege."

It wasn't long before Scoffham saw the brilliance of the man.

"I joined Enterprise Oil one-and-a-half years after Myles, when the company had been in existence for barely two years, but the Nelson opportunity had been spotted many months earlier," he said. "I then saw the concept being tested and refined to give us the confidence to make the bold business deals needed to make the Nelson story such a stunning success."

Calling Bowen the most reasonable, tolerant and realistic person with whom he's worked, Scoffham wants to thank and honor his crusty old friend.

"I owe much to Myles."

– BARRY FRIEDMAN

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Regions and Sections is a regular column in the EXPLORER offering news for and about AAPG's six international Regions and six domestic Sections. This month's column focuses on the Asia Pacific Region. Adrienne Pereira, AAPG's Asia Pacific programs manager, can be contacted at apereira@aapg.org.

REGIONSandSECTIONS

Work Begins On Singapore 2012 ICE

By PETER BAILLIE, AAPG Asia Pacific Region Vice President

The 2012 AAPG International Conference and Exhibition (ICE) will be held in late September in Singapore, with meeting dates subject to final confirmation once the Formula One schedule for 2012 is released.

The Republic of Singapore is one of the world's leading financial centers and a cosmopolitan world city. Singapore claimed the title of fastest-growing economy in the world, with GDP growth of 14.7 percent in 2010. The port of Singapore is one of the five busiest ports in the world and a major hub for the offshore oil and gas industry.

The Singapore ICE general chair is longtime AAPG member Ian Collins, a resident of Singapore who over the past 30 years also has held postings in Indonesia, Malaysia, Myanmar and Thailand.

Ian already has formed an active committee, primarily comprising representatives from throughout the Asia Pacific region.

"The Asia Pacific economy is the fastest growing in the world and is underpinned by global resource projects, in particular natural gas," Collins noted. "Singapore is a financial hub of this rapidly developing market, and it is therefore perhaps appropriate that the 2012 ICE is to be held here."

The previous ICE held in the region (Perth, Australia, in 2006) remains the largest ICE ever, with more than 2,500 registrants.

"We are planning aggressively and hope to attract at least as many as Perth," Collins said.

A Technical Program Committee has been formed and currently is setting a conference theme and specific topics, with the Call for Abstracts set to be issued later this year. An exciting program of short courses and field trips also is being planned.

Anyone interested in assisting the committee or getting on a list for information about ICE 2012 in Singapore should contact Adrienne Pereira, AAPG's Asia Pacific programs manager, at apereira@aapg.org.

Bowen

from page 32

What occurred? The Brent discovery, a 2.7-billion barrel field, largest in the UK sector of the North Sea.

The discovery, he said, as exciting as it was, had to be kept "tight" as the Fourth Round followed shortly after, which involved, for the first and last time, cash bids.

Shell bid £21 million for a Brent lookalike nearby – "causing consternation," Bowen said, "because it left £13 million on the table."

One Last Hurrah

Surprisingly, though, Brent wasn't the most exciting experience in his life.

"The Brent discovery was one high point," he says, adding he was actually on the rig at the time it came in, "but perhaps even more exciting was the Nelson discovery, when I was with Enterprise Oil and I had personally negotiated a 100 percent interest from three major companies."

The story goes like this:

Bowen, who after nearly eight years in the UK found that his "life quality, unlike the job (and contrary to the proportions in Venezuela), was poor to lousy," asked his bosses for a change.

He first went to Billiton, Shell's metals subsidiary, but he said "it took some time to get used to what I rudely referred to as 'Black and Decker' drilling."

He was then done with geology, he believed, and took early retirement.

Apparently, geology wasn't done with him.

Margaret Thatcher came to her senses, he says, and decided against selling off British Gas – and that was when Bowen returned as exploration director of the new Enterprise Oil.

The rest of the story, of course, is history. (see related story, page 30)

When asked, Bowen says his career unfolded in four distinct chapters:

- Field geologist.
- Oil exploration management.
- Metals/minerals exploration management.
- Exploration management with a small oil independent.

It hasn't always been a smooth transition.

"Early in my Shell career geology and geophysics were separate departments and hardly spoke to each other," he said.

Perhaps, then, one of his best contributions to the industry is helping the conversation along.

"I spent some months with Shell Oil (Texas, Louisiana, Oklahoma)," he said, "and learned that exploration was about seeking and finding hydrocarbons and that geophysics were just the best tools available; also that multi-disciplinary teams, given an area to work, was the best approach."

In 1996 he retired again (this time for good), settling in Devon on England's southwest coast with his wife, Margaret.

He has done some consulting since, but mostly these days he thinks about his hobbies, which include falconry, and his three daughters, Belinda, Joanna and Jenny.

As for geology, he has warm memories of it all – the fights with bosses, the maps, even the battles with leeches.

And it all led to the AAPG Pioneer Award. Like George Bailey in "It's A Wonderful Life," maybe he just needed to be reminded.

Committee Announces Insurance Enhancements

APG's Committee on Group Insurance has announced several significant benefit enhancements to the AAPG GeoCare Disability Income Insurance Plan.

Those include, at no additional cost:

- Benefits have been automatically increased by 25 percent for existing and new plan participants, which is actually comparable to a 20 percent rate decrease.
- The maximum monthly benefit has been increased from $7,500 to $10,000.
- A $10,000 workplace modification rehabilitation benefit has been added.
- Insured income has been expanded to include royalty income.

Also, a new optional Cost of Living Adjustment rider has been added, along with the addition of a five-year benefit plan.

The changes make AAPG's GeoCare Benefits Disability Income Insurance Plan one of the most comprehensive and competitively priced plans offered to any of the professional association clients of New York Life, according to the committee.

Committee Chair Terry Hollrah said all members should consider participation in the plan; financial protection from disability is fundamentally important for a working professional, since the probability of a disability is actually higher than a premature death (as per the 1985 NAIC Commissioner's Individual Disability Table A and the Statistic Abstract of the United States).

Also, the plan is personally portable throughout a member's career, regardless of employer changes, and will pay in addition to any other disability insurance.

For more information regarding the plan, members may visit AAPG's GeoCare Benefits website at www.geocarebenefits.com; call the GeoCare Customer Service Department toll-free at 1-800-337-3140; or e-mail geocarebenefits@agia.com.

3P Abstract Deadline

The call for abstracts deadline is approaching fast for AAPG's second Polar Petroleum Potential Conference and Exhibition – or simply, "3P Arctic" – which will be held Aug. 30-Sept. 2 at the World Trade and Convention Centre in Halifax, Nova Scotia, Canada.

The abstract submission deadline is Feb. 15.

The 3P technical program will consist of 15-20 sessions – including 150-160 oral presentations and more than 150 posters – that will cover all aspects of the geology, petroleum geology and geophysics of the Arctic and Circum-Arctic sedimentary basins.

Proposed topical themes include:

- Appraisal of Arctic Petroleum Resources.
- North Atlantic Conjugate Margins and the Arctic Connection.
- Cenozoic Uplift of Arctic Margins and Implications for Petroleum Potential.
- Evolving Tectonic Interpretations and Models – Including Insights from New Seismic and Potential Fields Data.
- Arctic Petroleum Systems.
- The Ellesmerian Orogeny and Basement Rocks of the Western Arctic.
- Northern Cordilleran-Brooks Range Connection.
- Evolving and Innovative Technologies for Arctic Operations.
- Geophysical Innovations for Arctic Data Collection, Processing and Interpretation.
- Fundamental Geology and Geologic Maps of the Arctic.
- Impacts of Climate Variability on Arctic Petroleum Potential and Operations.
- Arctic Unconventional Resources.

Also being planned are two field trips and a series of workshops-short courses.

To submit an abstract, or for more 3P information, go online to www.3pArctic.com.

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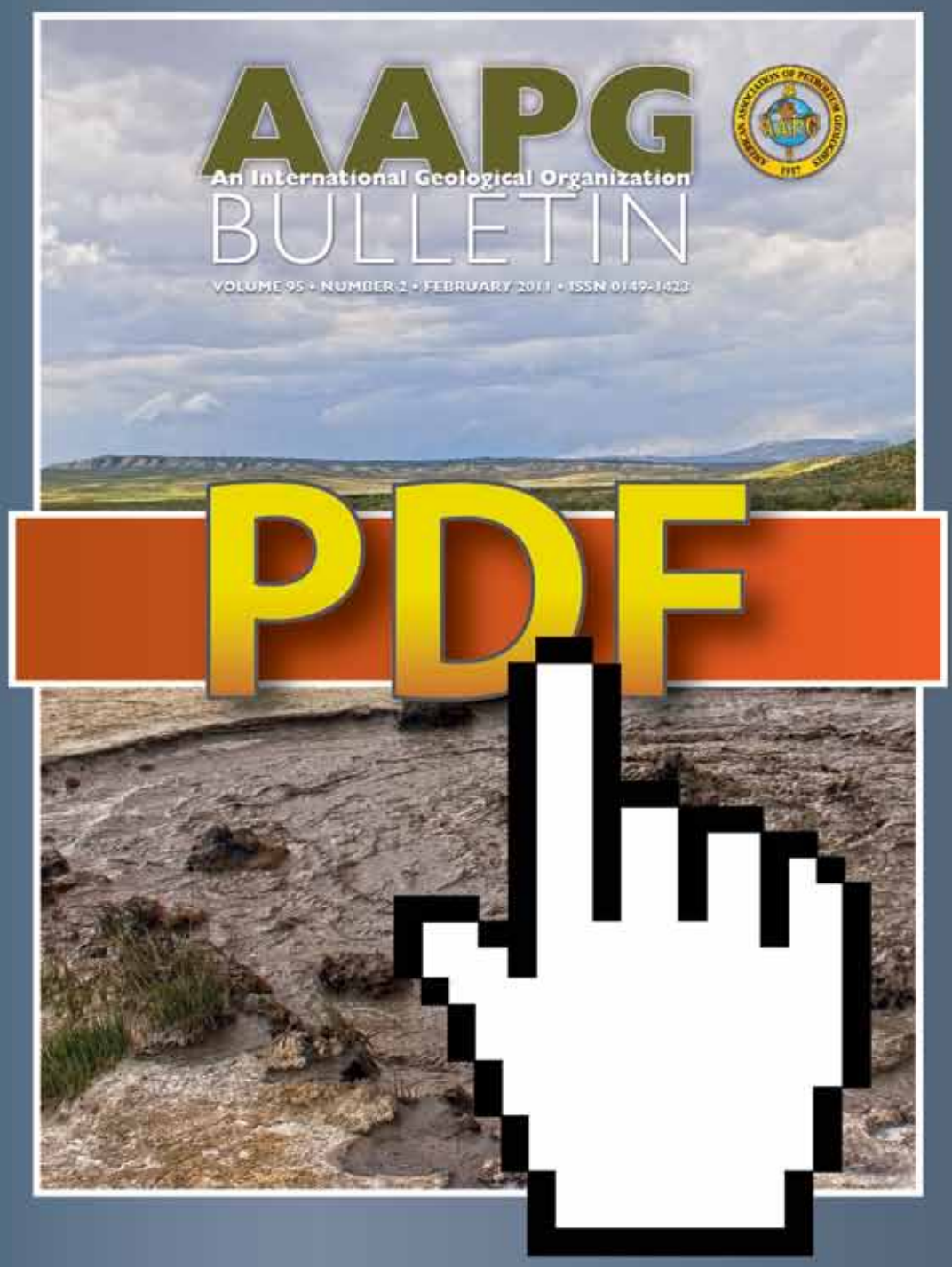

The AAPG Bulletin is a technical journal that is recognized in the industry as the leading peer-reviewed publication for information on geoscience and the associated technology of the energy industry.

The link below takes you to the Members Only login page where, with a few key strokes, you can click on a link for the Bulletin Online, the current issue, or for the Bulletin Archives, all issues of the Bulletin to date. Online as searchable html and .pdf files, the current issue is always available by the first of every month.

Members may access the AAPG Bulletin online at:
www.aapg.org/february_bulletin

Also, submit your next paper for consideration via www.aapg.org/bulletin

Article highlights include:

Effect of pore structure

Klaus Verwer, Gregor P. Eberli, and Ralf J. Weger

In carbonate rocks both the pore structure and the number of pores rather than cementation influence electrical resistivity. Samples with high resistivity can also have high permeability, and pore structure characteristics can be estimated from electrical resistivity data.

Self-contained petroleum systems

Robin S. Pilcher Bill Kilsdonk, and James Trude

Primary basins form stratigraphically continuous successions on autochthonous salt, and in the northern Gulf of Mexico they contain all the components of a petroleum system. Three tectonostratigraphic provinces that characterize primary basin depocenters and six trap types are defined in this study.

Chinese lithostratigraphic plays

Wenzhi Zhao, Caineng Zhou, Yingliu Chi, and Hongliu Zeng

Lithostratigraphic traps are the main source of reserve growth in the Songliao Basin, China. Exploration can be more successful by applying integrated approaches that combine a qualitative higher-order sequence-stratigraphic framework and a more quantitative analysis of seismic sedimentology.

A new process-based classification scheme

Bruce Ainsworth, Bayan K. Vakarelov, and Rachel A. Nanson

A process-based classification of clastic coastal systems based on relative dominance of fluvial, tidal, and wave actions can predict potential depositional processes acting at a coastline. This procedure will help to reduce and manage uncertainties in the predictions of changes.

WWWUPDATE

New on the Web

By JANET BRISTER, AAPG Website Editor

What's new?
2011. QR Codes. TECHPLACE. Dibble maps. GeoIP.

OK, I know you get the "2011" reference, but do you remember these other items?

▸ The **QR code** is found each month on page 3 in the EXPLORER, and it can be scanned by your smartphone for quick mobile access to the current EXPLORER.

It also is inside the 2011 AAPG Annual Convention and Exhibition announcement that was included with the January EXPLORER, so if you haven't found an App for that maybe you should.

▸ **TECHPLACE** is the new resource offered by PTTC and Datapages, providing summaries of the PTTC workshops.

▸ The **Dibblee maps** are digital maps that feature GIS functionality. The first release covered California geology and more maps are planned.

▸ **IP** is "internet protocol." GeoIP is the use of that to pinpoint where the person is geographically located. Based upon that geographic location, their AAPG home page will feature regional links.

As we enter the new year, a quick survey of our social media arena shows more of our members on LinkedIn joining our group; more on Facebook "like"-ing our AAPG page and its related pages; and more people following us on Twitter.

In this virtual community that is being built, ideas can be exchanged; technology discussed; contacts made and business transactions take place – just like any meeting where members gather.

We're not quite there yet, but we sure do have a good start.

Good browsing!

INMEMORY

Pete C. Aguilar, 75
Roswell, N.M., Nov. 22, 2010
Joy J. Anneler, 81
Houston, July 13, 2010
D.L. Brown, 81
Oklahoma City, May 30, 2010
John S. Dudar, 82
Houston, Oct. 29, 2010
Ralph Evans, 96
San Antonio, May 14, 2010
Joseph W. Fusso Jr., 84
Novata, Calif., Oct. 30, 2010
Frank L. Gouin, 82
Oklahoma City, June 2, 2010
Philip H. Halstead, 76
Littleton, Colo., May 5, 2010
Alexander Joseph Hruby, 84
Duncan, Okla., Nov. 14, 2010
Roland Banks Hudson, 82
Marble Falls, Texas, Sept. 23, 2010
William J. Kirst, 87
Calgary, Canada, March 27, 2010
Robert Mollison Knebel (EM 52)
Fort Worth
Donald Harry Kupfer, 92
Powell Wyo., Nov. 20, 2010
Richard Charles Meyer, 77
Franklin, Tenn., April 9, 2010
Edward H. Phelps, 83
Sanger, Calif., Nov. 28, 2010
Harold Curtis Porter, 78
Wichita, Kan., June 20, 2009
Rene R. Thibodaux, 51
The Woodlands, Texas
Sept. 19, 2010
Lee Roy Tramel, 75
Montgomery, Texas, Nov. 24, 2010
Kenneth David Woodruff, 73
Union Dale, Pa., Dec. 22, 2009

(Editor's note: "In Memory" listings are based on information received from the AAPG membership department. Age at time of death, when known, is listed. When the date of death is unavailable, the membership classification and anniversary date are listed.)

UPCOMING EDUCATION SCHEDULE

Field Seminars

Modern Terrigenous Clastic Depositional Systems **South Carolina**	April 27-May 4
Clastic Reservoir Facies and Sequence Stratigraphic Analysis of Alluvial-Plain, Shoreface, Deltaic, and Shelf Depositional Systems **Utah**	April 30-May 6
Complex Carbonates Reservoirs: Sedimentation and Tectonic Processes **Italy**	May 8-14
Play Concepts and Controls on Porosity in Carbonate Reservoir Analogs **Spain**	May 15-20
Folding, Thrusting and Syntectonic Sedimentation: Perspectives from Classic Localities of the Central Pyrenees **Spain**	June 6-10
Lacustrine Basin Exploration **Utah**	June 19-26
Northern Appalachian Basin Faults, Fractures and Tectonics and Their Effects on The Utica, Geneseo and Marcellus Black Shales **New York**	June 20-24

Short Courses

First Annual Summer Education Conference **Fort Worth, Texas**	June 6-10
Fractured Reservoirs: From Geologic Concepts to Reservoir Models **Casper, Wyoming**	June 18-23

Last Chance

E-Symposium: Siliciclastic Sequence Stratigraphy: Application to Exploration and Production **Online**	February 17 2:00 p.m., CST
Winter Education Conference **Houston**	February 28-March 4

Registration and Information:

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Download a registration form at http://www.aapg.org/education/index.cfm

(Editor's note: "Professional News Briefs" includes items about members' career moves and the honors they receive. To be included, please send information in the above format to Professional News Briefs, c/o AAPG EXPLORER, P.O. Box 979, Tulsa, Okla. 74101; or fax, 918-560-2636; or e-mail, smoore@aapg.org; or submit directly from the AAPG website, www.aapg.org/explorer/pnb_forms.cfm.)

PROFESSIONAL newsBRIEFS

Andreas Brandt, to consultant for new ventures – international exploration and development, Hamburg, Germany. Previously head of new ventures, Dragon Oil, Dubai, United Arab Emirates.

Randy Bruner, to geoscience consultant, Marathon Oil, Houston. Previously director of exploration and production, Layton Energy, Houston.

John Chapman, to chief geologist, EOG Resources, Houston. Previously division exploration manager, EOG Resources, Midland, Texas.

Arnoud J. de Feyter, to exploration team leader, OMV Yemen, Sana'a, Yemen. Previously global exploration adviser, Eni E&P, Milan, Italy.

Doug Jordan, to chief stratigrapher and manager of geology-geoscience technology group, Chesapeake Energy, Oklahoma City. Previously senior geologist-new ventures western district and international, Chesapeake Energy, Oklahoma City.

Val A. Kienast, to consulting geologist, Pearl Energy, Bangkok, Thailand. Previously senior staff geologist, Chevron Overseas E&P, Bangkok, Thailand.

Walter J. Korenkiewicz, to senior geoscience adviser-corporate development, Berry Petroleum, Denver. Previously senior geophysicist, Berry Petroleum, Denver.

Russell Roundtree, to vice president-technology, Global Microseismic Services, Houston. Previously manager-fracture diagnostics, Halliburton, Houston.

Christopher Saxon, to geologist, ETC seals and traps team, Chevron, Houston. Previously exploration geophysicist, Chevron Australia, Perth, Australia.

Doug Schultz, to senior geologist, Chesapeake Energy, Oklahoma City. Previously manager-sedimentology, Weatherford Laboratories, Houston.

Jeff Spencer, to senior geologist, Midstates Petroleum Co., Houston. Previously with Black Pool Energy, Houston.

Robert Strauss, to senior exploration geologist, Nexen Petroleum, Plano, Texas. Previously staff geologist, ConocoPhillips, Houston.

Max Torres, to exploration director-Europe/North Africa region, Repsol, Madrid, Spain. Previously exploration director-Latin America region, Repsol, Houston.

Jason Wallgren, to senior geologist, Pioneer Natural Resources, Las Colinas, Texas. Previously geologist, Sweet Lake and Oil, Lake Charles, La.

Ken Webb, to consulting geologist, McMoRan Oil & Gas, Houston. Previously geoscience manager, Ridgewood Energy, Houston.

Tim Williams, to vice president-upstream and feedstock acquisition, Methanex Corp. Previously vice president international exploration, Pioneer Natural Resources, Irving, Texas.

Geir Ytreland, to senior adviser, Norwegian Agency for Development Cooperation (NORAD), Oslo, Norway. Previously independent consultant, Oslo, Norway.

Loucks Gets Second Levorsen

Longtime AAPG member Robert Loucks has been named the winner of his second A.I. Levorsen Award, this one for presenting the best paper at last year's GCAGS annual meeting in San Antonio.

Loucks, with the Bureau of Economic Geology at the University of Texas in Austin, won for the paper, "Preliminary Classification of Matrix Pores in Mudrocks."

His co-authors were AAPG members Robert Reed, Stephen Ruppel and Ursula Hammes, all also with the BEG.

Loucks, an Emeritus member, previously won the Southwest Section's Levorsen Award in 2006. He also won the AAPG Wallace E. Pratt Memorial Award (best BULLETIN article) in 2001.

He will receive his award at the next GCAGS annual meeting, set Oct. 16-19 in Veracruz, Mexico.

Long Beach ACE Seeks Session Ideas

The Technical Program Committee for the 2012 AAPG Annual Convention and Exhibition is seeking proposals for session topics, field trips, short courses and workshops.

The 2012 meeting will be held May 22-25 in Long Beach, Calif., and the committee will consider all proposals from members of AAPG, SEPM and the DEG, EMD, and DPA divisions.

- Suggestions for session topics should include a tentative title; name(s) and contact information for the proposed session chair(s); and a short description of the content envisioned for the session.

Session chairs will be expected to solicit several invited papers.

- Field trip suggestions should include a title; name(s) and contact information for the proposed field trip leader(s); a tentative itinerary; and a short description of the field trip's geological goal and duration.
- Short course and workshop suggestions should include a title; name(s) and contact information for the proposed leader(s); and a brief description of the course/workshop's suggested content and length.

The deadline for submission of proposals will be Feb. 22.

Proposals should be sent via e-mail to both of the technical program co-chairs: **Gene Fritsche**, at geneandsuef@dslextreme.com, 818-882-8468; and **Kurt Neher**, at kurt_neher@oxy.com, 661-412-5203.

DLs Hit the Road

February will be a busy month for AAPG's Distinguished Lecture program, as seven speakers will be on tour – five domestically and two internationally.

Lecture tours are set for:

❒ **Scott A. Barboza**, research scientist and team leader, ExxonMobil Upstream Research Co., Houston, who will be touring western North American sites through Feb. 11. He will offer two lectures:

- "Mud Volcanoes: A Dynamic Model Motivated by Observations Offshore Eastern Trinidad."
- "Consequences of Multiple Phases of Tertiary Uplift and Erosion on the Thermal Evolution of Mesozoic Source Rocks, North Slope – Chukchi Sea, Alaska."

❒ **Joann E. Welton**, senior research associate at ExxonMobil's Upstream Research Lab in Houston, and this year's J. Ben Carsey lecturer, will tour eastern North American sites through Feb. 11. She offers two talks:

- "Evaluating Siliciclastic Reservoir Quality in a Changing World."
- "Grain Coats on the Brazos: Using Modern Studies to Understand the Origin of Porosity-Preserving Early Clay Grain Coats."

❒ **Ron Boyd**, principal geologist for the stratigraphy and quantitative modeling group, ConocoPhillips Subsurface Technology, Houston, who will be touring eastern North America Feb. 7-19. He will offer two lectures:

- "A One-Way Ticket From Antarctica to the Tasman Abyssal Plain via the Great Barrier Reef – Sediment Dispersal on the Eastern Australian Margin."
- "Coastal Facies Models."

❒ **James L. Coleman Jr.**, director of the Eastern Energy Resources Science Center, U.S. Geological Survey, Reston, Va., who will tour western North America Feb. 14-25. He will offer three lectures:

- "Tight-Gas Sandstone Reservoirs: The 200-Year Path From Unconventional to Conventional Gas Resource and Beyond."
- "Examination of Potential Factors Affecting Successful Exploration and Production of Devonian Marcellus Shale Gas, Eastern United States."
- "Tight-Gas Sandstone Reservoirs: 25 Years of Searching for 'The Answer.'"

❒ **Steve Cumella**, geologist with Bill Barrett Corp., in Denver, and this year's Haas-Pratt Distinguished Lecturer. He will tour western North American sites Feb. 28-March 11, offering two lectures:

- "Geology of the Giant Continuous Gas Accumulation in the Mesaverde Group, Piceance Basin, Colorado."
- "Important Characteristics of Rocky Mountain Tight Gas Accumulations."

❒ **Dale R. Issler**, senior research scientist for the Geological Survey of Canada, Calgary, and this year's Dean A. McGee Endowment speaker, will tour Asia-Pacific locales Feb. 11-26. He offers two lectures:

- "Integrated Thermal History Analysis of Sedimentary Basins Using Multi-Kinetic Apatite Fission Track Thermochronology: Examples from Northern Canada."
- "Quantitative Analysis of Petroleum Systems of the Beaufort-Mackenzie Basin, Arctic Canada: An Integrated Approach."

❒ **Mohammed S. Ameen**, leader of the Structural and Rock Mechanics Group, Saudi Aramco, Dhahran, Saudi Arabia, will tour Middle East Region locales Feb. 21-March 14. His lecture is titled "A Paradigm Shift in Understanding Fracture Origin and Fracture Influence on Deep Carbonate Reservoir Performance: A Study of Onshore Permo-Triassic Deep Reservoirs in Saudi Arabia."

For more information go online to www.aapg.org/education/dist_lect/index.cfm.

2011 PS-AAPG Convention

Arctic to the Cordillera: Unlocking the Potential

May 9th – May 11th -- Anchorage, Alaska Sheraton Hotel with Western Region SPE, Pacific Section SEPM, Pacific Coast Section SEG: hosted by The Geological Society of Alaska

The 2011 annual conference of Pacific Section of the American Association of Petroleum Geologists (PS-AAPG) will be held in Anchorage, Alaska – the gateway to the 'Last Frontier'. The Pacific Section of SEPM and the Pacific Coast Section of SEG will also be participating in the conference and will sponsor several of the technical sessions. The Western Region of the Society of Petroleum Engineers will be co-hosting the conference and helping to provide a cross-discipline forum that offers attendees a wide variety of technical presentations, poster sessions, short courses, and field trips.

The technical sessions and poster presentations are to be presented on the 9th through the 11th of May with short courses and field trips both before and after these sessions. Addition information regarding the oral and poster sessions can be found at both the PS-AAPG and AAPG websites. The deadline for abstract submittal is February 11, 2011.

The opening session will be held on Sunday, May 8, from 4:00 to 6:00 pm followed by the Ice Breaker in the Exhibits area from 6:00 to 8:00 pm. Additional events, such as an evening at the Alaska Native Heritage Center, are scheduled for your entertainment and enlightenment.

FOUNDATIONUPDATE

Support the Profession

Want to Help?

By NATALIE ADAMS, AAPG Foundation Manager

Looking for a new way to support the next generation of geoscientists?

Here are a few ideas to consider as you build goals for 2011:

Recognize the accomplishments of others.

The AAPG Foundation's Awards Fund is used to recognize excellence and accomplishments – from students to teachers to stalwarts who have made a difference.

Promote knowledge.

The Foundation provides specific support for Datapages, the BULLETIN, Search and Discovery and a variety of special publications each year – as well as an amazing video production, continuing education, lectures, student competitions, scholarships, K-12 programs and web services that are key in the dissemination of scientific information.

Build the future.

Many proposals are submitted to the Foundation yearly that are in need of funding. Some are research oriented; some are for fieldwork, teaching or training. Your contributions enable more geoscientists and students reach their objectives.

Have something specific in mind? You may want to support scouting, or you may choose to provide financial assistance for college and university professors to help defray the cost of attending AAPG courses.

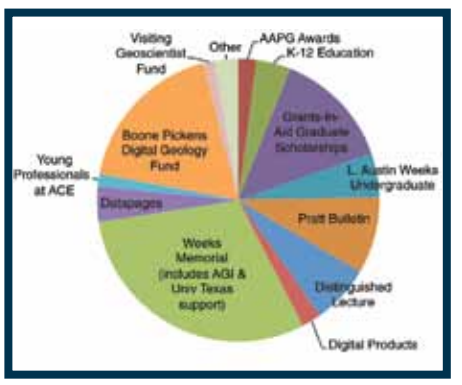
Remember someone.

Make a contribution to any of the wonderful programs that the AAPG Foundation supports in honor of or in memory of a special individual. We'll be sure to give them the recognition they deserve.

Get involved.

Your presence is requested! Attend one of AAPG's many events, including the upcoming AAPG Annual Convention and Exhibition, set April 10-13 in Houston. Or join a committee. Or become an AAPG Foundation Trustee Associate. For more information go to foundation.aapg.org/trusteeassociates.cfm, or call 918-560-2674.

The accompanying chart shows the breakdown of the Foundation's 2011 budget.



* * *

The newest member of the Foundation Trustee Associates is **David Hawk**, from Boise, Idaho, current chair of the AAPG House of Delegates.

We'd also like to acknowledge **John Silcox** for establishing the John H. and Colleen Silcox Named Grant fund, which will support a graduate student in petroleum exploration.

For information on Trustee Associate membership or other Foundation programs, contact the Foundation staff at 918-560-2644, or foundation@aapg.org.

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Arden A. Anderson
Henry S. Anderson
Lee B. Backsen
David W. Ballard
William W. Ballard
William J. Barrett
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In memory of William Gray Johnson

Continued on next page

Foundation Opportunities

Proposals for funding by the AAPG Foundation should be sent Natalie Adams, at nadams@aapg.org.

All funding decisions are made by the Foundation's board of trustees, which meets three times annually to review proposals. Applications for grants to projects and programs that fulfill its mission are welcome; decisions are based on available funds.

For more information, go to foundation.aapg.org and click on the "Funding" tab.

To establish a fund or contribute to an existing fund, go online to www.aapg.org/eDonation/Core/eDonation.aspx, or contact the Foundation staff by e-mail (foundation@aapg.org), phone (888-945-2274, ext. 274) or mail to P.O. Box 979, Tulsa, OK 74101.

Continued from previous page

Awards Fund

Robert Berg Outstanding Research Award

Josephine F. Berg

In memory of Robert R. Berg

Imperial Barrel Award Fund

Edith C. Allison

Grover E. Murray Memorial Distinguished Educator Award

Sally M. Murray

In memory of Grover E. Murray

Bridge Fund

ConocoPhillips Corporate Contributions

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In memory of Bill Dixon

Samir Abd-El-Rahman Ghazi

Wilson Humphrey

Jeffrey A. May and Karen Crossen

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In memory of Brian J. O'Neill

Fred A. and Jean C. Dix Named Grant

John B. "Jack" Thomas

Robert K. Goldhammer Memorial Grant

Encana Cares (USA) Foundation

Matching gift for Mark Gallagher

Michel T. Halbouty Memorial Grant

John R. Maxwell

Charles A. and Linda R. Sternbach

In memory of Michel T. Halbouty

Donald A. and Mary O'Nesky Named Grant

Donald A. O'Nesky

In honor of AAPG staff and AAPG Foundation staff

John H. and Colleen Silcox Named Grant

John H. Silcox

Weimer Family Named Grant

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David W. Worthington Named Grant

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Michel T. Halbouty Lecture Fund

Robert B. Ferguson

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John and Ann Willott

Leonard Ancuta

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Gary N. Polasek

Erik Mason Scholarship Fund

(Oklahoma State University)

C. Scott Cameron

PetroGrant Fund

Robert S. Hobbs

In honor of O.T. Hayward

Public Service Fund

Hugh Looney Excellence Fund

Walter A. Laufer

In memory of Hugh Looney

Tillie Looney

In memory of Hugh Looney

Named Public Service Fund

James A. Gibbs

Publication Pipeline Fund

Martin M. Cassidy

Gretchen M. Gillis

In honor of Publication Pipeline Committee

E.F. Reid Scouting Fund

Willis R. Brown

John A. Carver

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Mark A. Yanoski

Special Publications Fund

John J. Amoruso

Visiting Geoscientist Fund

Lee T. Billingsley

In honor of Don Tobin

Henry S. Pettingill

In memory of Erik Mason

L. Austin Weeks Memorial Grant

Louis J. Conti

APPEX Opens March 1

The eleventh annual APPEX, AAPG's international Prospect and Property Expo, will be held March 1-3 at the Business Design Centre in London, England.

APPEX provides a setting for networking, prospect shopping and deal-making – and the audience historically includes principals, senior managers, business developers and new venture managers, plus NOCs, government officials, global E&P operators and top level decision-makers.

The event offers:

- Global upstream opportunities.
- Finance and Prospect forums.
- The International Pavilion.
- New ventures, new regions, worldwide trends and discoveries.
- International farm-outs, asset trading.
- High-level keynote speakers.

Reduced registration rates are available if done by Feb. 13.

To register, or for more information, go to www.appexlondon.com.

MEMBERSHIP&CERTIFICATION

The following **candidates** have submitted applications for membership in the Association and, below, certification by the Division of Professional Affairs. This does not constitute election nor certification, but places the names before the membership at large.

Any information bearing on the qualifications of these candidates should be sent promptly to the Executive Committee, P.O. Box 979, Tulsa, Okla. 74101.

Information included here comes from the AAPG membership department.

(Names of sponsors are placed in parentheses. Reinstatements indicated do not require sponsors.)

Membership applications are available at www.aapg.org, or by contacting headquarters in Tulsa.

For Active Membership

California
Arthur-Silva, Joy Ellen, California Division of Oil and Gas, Sacramento (J. Salera, W. Winkler, T.R. Kustic); **Davies, Emily M.**, TTI Exploration, San Ramon (A.E. Prelat, C.A. Freeman, L.E. Huebner)

Louisiana
Crandall, Mallory Kay, Anderson Oil & Gas, Shreveport (W.R. Meaney, D. Sevier, G.E. Kelly)

Montana
Smith, Larry N., Montana Tech of the University of Montana, Butte (reinstate)

Ohio
Currie, Brian S., Miami University, Oxford (M.L. McPherson, L.H. Wickstrom, C.D. Morgan)

Oklahoma
Muselmann, John D., independent, Tulsa (J.R. Biddick, D.H. Finnefrock, W.C. Schmidt); **Quan, Tracy Michelle**, Oklahoma State University, Stillwater (A.M. Cruse, J.O. Puckette, J.M. Gregg)

Texas
Little, James, Department of Defense, Houston (A. Lowrie, P. Fleischer, T.R. Loftin); **Palmer, Jessica Ann**, Shell International E&P, Houston (A.E. Sullivan, C.L. Mongold, M.A. Thomas); **Rubio, Jeff R.**, Fairways Exploration & Production, Houston (J.R. Banttari, G.W. Streitel, J.W. Pierce)

Azerbaijan
Kuramshina, Najiya Shekyurovna, BP/ Azerbaijan, Baku (reinstate)

Canada
Lyster, Steven, Energy Resources Conservation Board, Edmonton (A.P. Beaton, D.J. Bechtel, C.D. Rokosh)

Germany
Alles, Sascha, ExxonMobil, Hannover (M.E. Effler, J.W. Snedden, R. Littke)

India
Krishnasamy, Karvannan, Oil and Natural Gas Corp., Dehradun (S. Kar, S.K.R. Moulik, R. Misra); **Sen, Gargi**, Schlumberger, Gurgaon (D.B. Waghorn, B.N. Naidu, N. Kumar)

Netherlands
Thackrey, Scott, Shell, Assen (J.H. Lightenberg, A. Hurst, A.J. Hartley)

Nigeria
Epelle, Ebenezer Seth, NNPC-NAPIMS, Lagos (E.G. Gwong, C.P. Okoro, O.S. Oladebo); **Matthew, Olabode Samuel**, Korea National Oil Corp., Lagos (A.A. Adesida, M.L. Afe, G. Udoekong); **Okafor, Chioma Uche**, Chevron, Lagos (A.E. Guzman, O. Bakare, A.O. Ekun)

Thailand
Maneejan, Raweewan, Pearl Oil (Thailand), Bangkok (D.C. Carter, C.A. Oglesby, M.I. Chamberlain)

Trinidad & Tobago
Moonan, Xavier Ravi, Petrotrin, Penal (C.L. Archie, S.C. Chatelal, A. Ramlackhansingh)

Certification

The following are **candidates** for certification by the Division of Professional Affairs.

Petroleum Geologists

Colorado
Dolan, Michael P., Dolan Integration Group, Boulder (W.M. Blount, M.E. Effler, John B. Curtis)

Kentucky
Maynor, Gregory K., consultant, Louisville (M.S. Reed, M.P. Sanders, D. Wells)

Texas
Kelley, Allen Leon, Ralph E. Davis Associates, Houston (D.M. Semetko, J.S. Jenkins, J.M. Jurasin); **King, Tommy Joe**, geologist, Dallas (R.A. Cannon, C. Clayton, W.R. Guffey); **Sechrist, Scott Charles**, Acoustic Geoscience Consulting, Houston (Society of Independent Professional Earth Scientists)

West Virginia
Lucas, Ian M., Consol Energy, Jane Lew (R. Goings, C. Edmonds, D. Reif)

Australia
Singh, Udesh, Chevron Australia Pty., Perth
(P. Harris, D. Sibley, W.F. Robinson IV)

Petroleum Geophysicist

Texas
Sechrist, Scott Charles, Acoustic Geoscience Consulting, Houston (Society of Independent Professional Earth Scientists)

Letters to the editor should include your name and address and should be mailed to Readers' Forum, c/o AAPG EXPLORER, P.O. Box 979, Tulsa, Okla. 74101, or fax (918) 560-2636; or e-mail to forum@aapg.org. Letters may be edited or held due to space restrictions.

READERS' FORUM

Downhole Geology Strides

Regarding your story on the advances made in downhole geology technology over the past decade (December EXPLORER): I am a 26-year production geologist, retired and now consulting part time with 15 years experience global on lots of super giant fields of all types.

I think LWD borehole images and LWD pressure points are the biggest advances I saw in my last 10 years working. The images allow a real-time and memory picture of what is happening down hole to understand the reservoir, overburden problems, structure and stratigraphy. So saving money on drilling problems, geosteering and avoiding plugbacks and sidetracks is a real advantage.

This, combined with rotary steerable drilling, has permitted targeting much smaller oil and gas columns and increased recovery per well.

Pressure points always are the best data you recover on any type of reservoir. So the ability to get them in real-time LWD in high angle wells without E-line adds tremendous value for reservoir surveillance and development.

Dirk Bodnar
Murrieta, Calif.

Ditto – Plus the Burgess Shale

First, regarding "Downhole Tech Made Big Strides": It always has been a problem of gathering good data and then sending it to the archives never to see the light of day again. It has been my contention that it is not the data that is missing that is a problem, but the data that is available that is not used for maximum benefit.

Why should this be?

The rapid increase in knowledge leading to more and more specialization to stay abreast of the developments in an ever-narrower field is perhaps the main cause. Others are:

- People with too little interest in data and knowledge outside of their specialization.
- Letting non-geologists/geophysicists interpret data that requires a good earth science background a lot of relevant experience.
- Expecting service companies to provide you with the best use of their data when the interpreters lack relevant training and experience – and are not prepared to lay it on the line when the measured data may be faulty or of relatively little use.

Mobil used to send all interested earth scientists to advanced logging schools run for the company by company employees who had far greater knowledge of how to use the data than the service company who made the measurements. Too many earth scientists work only in exploration and avoid the opportunity to work in production geology with vastly more data and hone their understanding of the measurements relative to production results.

Second, regarding your story in the same EXPLORER on the Burgess Shale: Fascinating! I love to see the advancement of geology through a different interpretation (of something) long known and studied.

I'm not sufficiently current regarding the mass of studies available for the Burgess Shale, but this looks like a very promising and new avenue of research.

I must also admit that I was unaware of the source of the mud in mud volcanoes, and now have to do some catch-up study on this subject as well.

It is great to be a geologist and see the continuing growth of our understanding of the earth.

Conrad Maher
Newport Beach, Calif.

One Way to Find Out ...

Regarding your story on NPR-A and Alaska reserves (December EXPLORER):

When government estimates of oil potential in some relatively unexplored basin are published, I always have a nice laugh and I remember Wallace Pratt's famous adage that every AAPG member knows.

However, if we aren't allowed to drill, no oil will ever be found ...

John H. Cunniff
Lafayette, La.

Editor's note: It was the legendary Wallace Pratt, a founding member of AAPG, who also said to Time magazine in 1942, "Where oil is first found is, in the final analysis, in the minds of men." His theme of " … oil must be sought first of all in our minds" was included in his book, "Oil in the Earth," published that same year – and it has been repeated, reworded and rediscovered by every generation of explorationists.

Spring Student Expo Set March 9-11

The AAPG/SEG Spring Break Student Expo, an annual job fair offering a chance for students to network and take a good first step toward starting their careers, will be held March 9-11 at the University of Oklahoma, Norman, Okla.

The Expo also offers a judged poster contest (top prize is $500), optional short courses, a field trip and formal interview times with energy-related companies.

Registration is free for AAPG and SEG Student members – but the deadline for registering and submitting poster abstracts and résumés is Feb. 18.

For more information go online to geology.ou.edu/expo/expo2011.php.

CLASSIFIEDADS

POSITION AVAILABLE

Petroleum Exploration Geologist
Newfield Exploration
Tulsa, OK

Seeking Geologist, responsible for conducting detailed prospect analysis and play fairway assessments within the Mid-Continent Region plus the generation and presentation of prospect ideas and leads to management. This position would be located in Tulsa, OK.

The successful applicant will generate and update maps, logs, cross-sections and corporate databases with new tops, correlations, shows and other pertinent geological data. Develop regional, multi-county stratigraphic framework and subsurface correlations.

Minimum qualifications, ten years of experience, knowledge of Mid-Continent upstream oil and gas, experience with conventional and un-conventional plays, experience doing play-fairway analysis assessments. Send resume to klefler@newfield.com.

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Energy Science
School of Earth Sciences
The College of Arts and Sciences
The Ohio State University

The School of Earth Sciences at The Ohio State University (OSU) invites applications for a newly established tenure-track position in Energy Science – broadly defined. We are seeking applicants with a doctoral degree and research interests who will address fundamental problems directly relating to energy in the drillable subsurface. Potential applicants will have interests in one, or several topical areas such as unconventional hydrocarbon resources, carbon chemistry, energy recovery and storage or geomechanical impacts on energy extraction processes. The candidate will have advanced capabilities in at least some of the following areas: 1) mathematical modeling of physical, chemical and biochemical transformations of carbon in the subsurface, 2) oil and gas formation/migration, 3) carbon migration, 4) mechanical properties of rocks (fracture modeling) in relation to reservoir development, 5) thermodynamics, 6) reflection seismology or 7) energy systems in basin analysis. We expect that this individual will develop strong collaborative links and funding opportunities with industries concerned with problems of the subsurface in addition to federal agencies.

The successful applicant is expected to have a developing record of research achievement through publications and external funding. Applicants from industry with such a track record of excellence are encouraged to apply. The new faculty member will be expected to contribute to the development, teaching, and enhancement of our education program in energy at the graduate and undergraduate levels. The new hire is expected to develop an independent research program in the area of energy science, and to generate external funds at a level that is appropriate for maintaining a research program at a major academic institution. We expect a strong effort to foster interactions with energy-related companies and to develop student opportunities in the energy area.

Applicants should submit a letter of application, curriculum vitae, and a statement of research interests and teaching philosophy. Candidates should arrange for three letters of recommendation to be sent under separate cover by the candidate's referees. Applications and letters should be sent to: Professor Frank W. Schwartz, 275 Mendenhall Laboratory, 125 South Oval Mall, School of Earth Sciences, The Ohio State University, Columbus, OH, 43210. The anticipated start date for the position is October 1, 2011. The position is open until filled. Information about the School of Earth Sciences can be found at http://www.earthsciences.osu.edu.

To build a diverse workforce Ohio State encourages applications from individuals with disabilities, minorities, veterans and women. EEO/AA employer. Ohio State is an NSF Advance institution.

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MSc in Integrated Petroleum Geosciences (IPG).

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DIRECTOR'SCORNER

Region Activities Make Impact

By RICK FRITZ, AAPG Executive Director

Last year the Executive Committee, Advisory Committee and senior staff force-ranked AAPG's top 25 programs. Generally, the outcome was what you might expect, with the BULLETIN, EXPLORER and ACE (annual meeting) taking the top rankings.

Other highly ranked programs include the AAPG website, Datapages, Special Publications, Student Chapters and Distinguished Lecturers.

I realized through this process that some of our programs are not well known because they are niche or unique to a Region. Three of those are the APPEX, GEO-Middle East and GEO-India conferences and exhibitions.


FRITZ

AAPG leadership has followed its strategic plan of globalization through expanding our scientific offerings.

▸ The **APPEX** program is an offshoot of the original AAPG Prospect and Property Expo that was started in Houston in 2001. It was designed similar to NAPE, with emphasis on geoscientists.

A few years later we started APPEX London. It was designed to be a global prospect and property expo. APPEX London was never as large as APPEX Houston, with about 300-400 attendees compared to 2,000-plus attendees in Houston.

After AAPG joined the NAPE program and discontinued APPEX Houston there were questions about continuing the APPEX London program – but after a few interviews with attendees and staff we realized that APPEX London had a loyal following and was starting to develop an attendee base and revenue that would allow it to grow.

APPEX London is now a regular fixture in London during March of each year with more than 500 attendees.

The event continues to grow and now features a forum with a series of speakers discussing plays and concepts around the world. You can find a little reminder about this year's meeting on page 44 of this EXPLORER.

We are expecting 800 attendees this year, and new revenue from APPEX London is used to support the European Region.

This year APPEX London will be held March 1-3.

▸ The **GEO-Middle East Conference and Exhibition** is undoubtedly one of the best geoscience conferences in the world. It is operated by Arabian Exhibition Management (AEM), a member of the Allworld Exhibitions group.

GEO-Middle East is supported by Saudi Aramco and many other national oil companies and integrated oil companies.

In 2006 AAPG became the Secretariat for the GEO Middle-East Conference. This essentially means we support the technical program committee and manage all facets of the conference, including collecting and managing the abstractions, communications with speakers and making sure operations run smoothly onsite.

In addition to AAPG, the program also is supported by SEG, EAGE and several national geoscience societies in the Region that assist with the conference and offer a variety of professional development opportunities before and after the event.

The GEO-Middle East Conference is held on even years in March, and it always boasts a large exhibition along with the technical program. AAPG's net revenue from the GEO-Middle East conference supports AAPG activities in the Middle East Region.

▸ Three years ago AAPG also agreed to work with AEM to develop the **GEO-India** conference and exhibition. The second edition of this event was just held in Greater Noida outside New Delhi this January, in sponsorship/partnership with ONGC and the Association of Petroleum Geologist India (AAPG's affiliate). Both attendance and exhibit space grew this year over 1,500 attending.

The conference draws the best technical papers of the Region, and help support AAPG activities in India.

* * *

During the past seven years AAPG leadership has followed its strategic plan of globalization through expanding our scientific offerings. The Region offices, short courses, geoscience technology workshops and partnerships in technical conferences have allowed us to grow and help disseminate great science.

Although the APPEX, GEO-Middle East and GEO-India meetings are not well known across the AAPG membership, they are key events in support of the Regions – and AAPG's involvement has been an important part of building new relationships and our geosciences community worldwide.

DIVISIONS'REPORT

Seeing Some Good News

By MICHAEL D. CAMPBELL, EMD President

My first six months as president of the AAPG Energy Minerals Division has brought both a broader and a more detailed understanding of the energy picture in the United States and the world in general. This has resulted in new realizations and in forming new opinions on a variety of energy-related topics, some of which I would like to share with you.

* * *


CAMPBELL

Although much is made in the media of the federal government's role in the economy, its actual impact is minor.

There is good news in the energy field these days! Why? Because as we emerge from the impact of the blunders on Wall Street, there is a growing sense the American economy has re-engaged and that we are on a new track of sustainable, albeit slow, growth as partners in the international economy.

At the core of this stabilization is the energy industry.

Although much is made in the media of the federal government's role in the economy, its actual impact is minor. Government funding policies attempt to guide the economy while meeting certain basic requirements of society and to spread funding around the world to further stability and friendship.

As we all can see, this is politically driven, and it is fortunate that it has a small but vociferous impact on the reality of the American and world economy. Just as in stem cell research, the government has the voice but not the pockets of industry to press a program forward.

The same appears to be true in the energy industry. Although energy policy is offered to the federal government from the left and from the right, it's really the energy industry operating within a reasonably open economy that has the impact on the economy, jobs, other industries, etc.

Unrestrained capitalism, however, needs to be carefully balanced by governmental controls from time to time – but neither too much nor too little.

While the federal government is influenced by political whims, the energy industry is guided by what makes dollars and sense economically and practically. And guess who is found at the core of the energy industry? Not the corporate presidents (and associated management) but the geoscientists (geologists and geophysicists) within the energy industry! The management evaluates the risks and allocates the funding to find and to develop energy for the economic markets of the United States and the world.

Geoscientists must deal with the variety of energy resources, but not all such resources are created equal. Each have price tags, each have environmental impacts. As these issues are weighed and examined, some will remain, some will fade into history, some will be used in new ways.

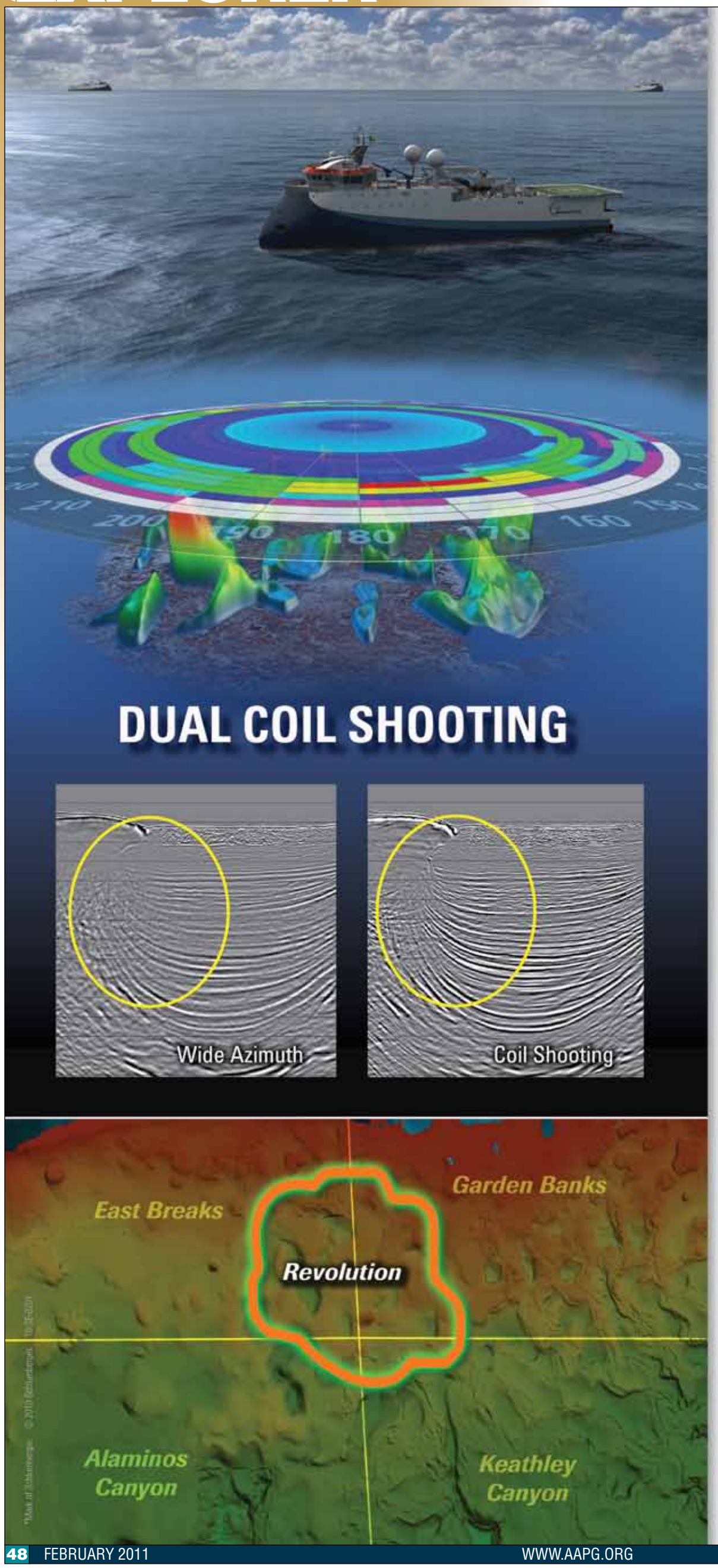
We are in a transition period of 20-to-30 years from the old ways to the new ways of energy utilization. Over the next few decades, natural gas from a variety of resources and nuclear power will continue to prove their economic and practical value, while geothermal and other hydrocarbon and carbon-based energy resources will contribute in new ways or under special economic circumstances.

To explore for and to develop these resources, the some 36,000 energy geoscientists of the AAPG and its three Divisions (EMD, DPA and DEG) are at the core of the energy industry – and will be needed for the decades to come.

* * *

These are interesting times for the current geoscientist. So were the past 100 years for the earlier geoscientists. Guess who still will be involved, mostly through robotics most likely, and who gets to go off-world in the centuries ahead to explore for the needed energy and mineral resources?

You can bet the AAPG still will be supporting the energy geoscientist in a form similar to that coming in April at the AAPG Annual Convention and Exhibition in Houston – by providing the new geoscience and technology in one form or another in the meetings of 2111 and beyond.



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