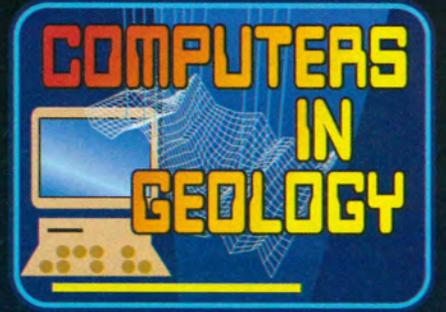


# EXPLORER

JUNE 2004



**Reality Shows**

**Bringing Outcrops To a Desk Near You**

**See page 8**

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**On the cover:** Remember when field trips were the only way to study and secure outcrop data? Those days are fading fast, thanks to lasers and cutting edge computer technology that are making it possible to have 3-D outcrop available for geologists – and you don't have to be working for a giant company to benefit from the advances. See story on page 8. Images and photograph courtesy of Ole Martinsen, Norsk Hydro Research Lab.

## CONTENTS

Seeing (more) is believing (way more): Laser technology and cutting-edge computers are providing stunning – and increasingly useful – **3-D outcrop images**. **8**

Has your computer been bitten by the virus bug? Many have – but here's some things you can do to help build your own **personal computer security** system. **12**

An exciting exploration play – based on a new interpretation and good ol' geologic detective work – is gathering momentum in the **Tucumcari Basin** of eastern New Mexico. **16**

The spirits were high, and a strong technical program helped make the AAPG **Annual Meeting** in Dallas a successful time for all. **20**

High-profile member **T. Boone Pickens** had to wait 25 years for the chance to speak at an AAPG annual meeting – and guess what he talked about in Dallas? Hint: Water, water everywhere ... **21**

He once discovered oil, and now he discovers the joys of a well-turned phrase: **Gary Penley**, like so many other AAPG members, is using his geologic past to help find success in the world of writing. **22**

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Photo courtesy of Cancun Conventions and Visitors Bureau

The Cancun Convention Center, surrounded by modern hotels, popular beaches and cultural treasures, is the site of the AAPG International Conference and Exhibition, set Oct. 24-27, which features a strong technical program. See page 26.

## PRESIDENT'S COLUMN

# BULLETIN Entering New Publishing Era

By **STEVE SONNENBERG**  
"The times they are a-changing" was a popular Bob Dylan lyric that reflects our world today.

Change is generally for the good and reflects progress and improvement – even though humans generally resist change, in that they fall into a comfort zone and do not care to experience anything different.

The AAPG Executive Committee is working toward some significant changes for the members to reflect changing times, progress and improvements.

For example, AAPG is dedicated to providing the best in geoscience publications. Thus the Executive Committee established an ad hoc committee to look at the format, style and future of the BULLETIN.

Members of this committee, appointed by me, were the candidates for elected editor (Jim Handschy and Ernie Mancini); candidates for president-elect (Alfredo Guzman, Chuck Noll and Pete Rose); Nahum Schneidermann; Jack Thomas (AAPG geoscience director); Paul Weimer (AAPG treasurer); and John Lorenz (current AAPG editor).

The committee recommended that

the BULLETIN shift to an all-electronic, online BULLETIN. This shift is in line with new technology, and many of our members (approximately one-third) already subscribe to the electronic BULLETIN.

The recommended plan has the following provisions:



Sonnenberg

✓ Abstracts of each BULLETIN article will be published in the EXPLORER monthly, along with the elected editor's comments. An e-mail tickler will also be sent to members each month.

✓ A CD containing the BULLETIN

articles for the previous six issues will be mailed to members every six months.

✓ For members who still want hard copy, the option will be available – but with associated mailing costs. The hard

See **President**, page 6

## New Officers Announced For 2004-05 Term

Austin consulting geologist Peter R. Rose has been voted president-elect by the AAPG membership. He will serve as AAPG president in 2005-06.

Also elected were:

☐ Vice president – Neil F. Hurley, of the Colorado School of Mines, Golden, Colo.

☐ Treasurer – Dwight "Clint" Moore, Houston

☐ Editor – Ernest A. Mancini, of the University of Alabama, Tuscaloosa, Ala.

Remaining on the Executive Committee is Robert L. Countryman, geological advisor, Occidental Petroleum, Bakersfield, Calif., who will complete his two-year term as secretary.

The new officers will take on their duties July 1, when Patrick J.F. Gratton assumes the presidency.

Valary Schulz, of Matador Resources, Dallas, will serve on the Executive Committee as chair of the House of Delegates. ☐

Vol. 25, No. 6

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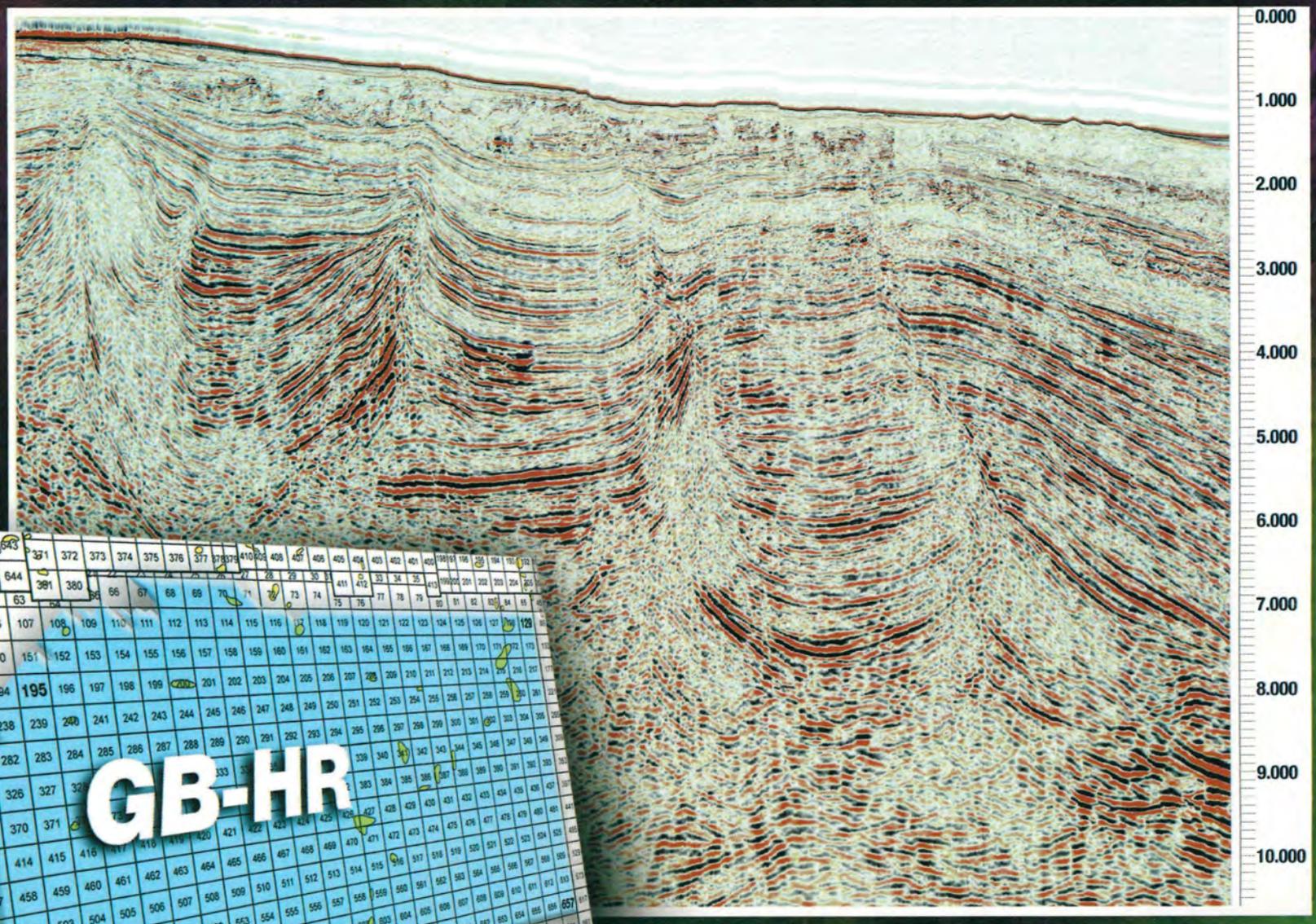
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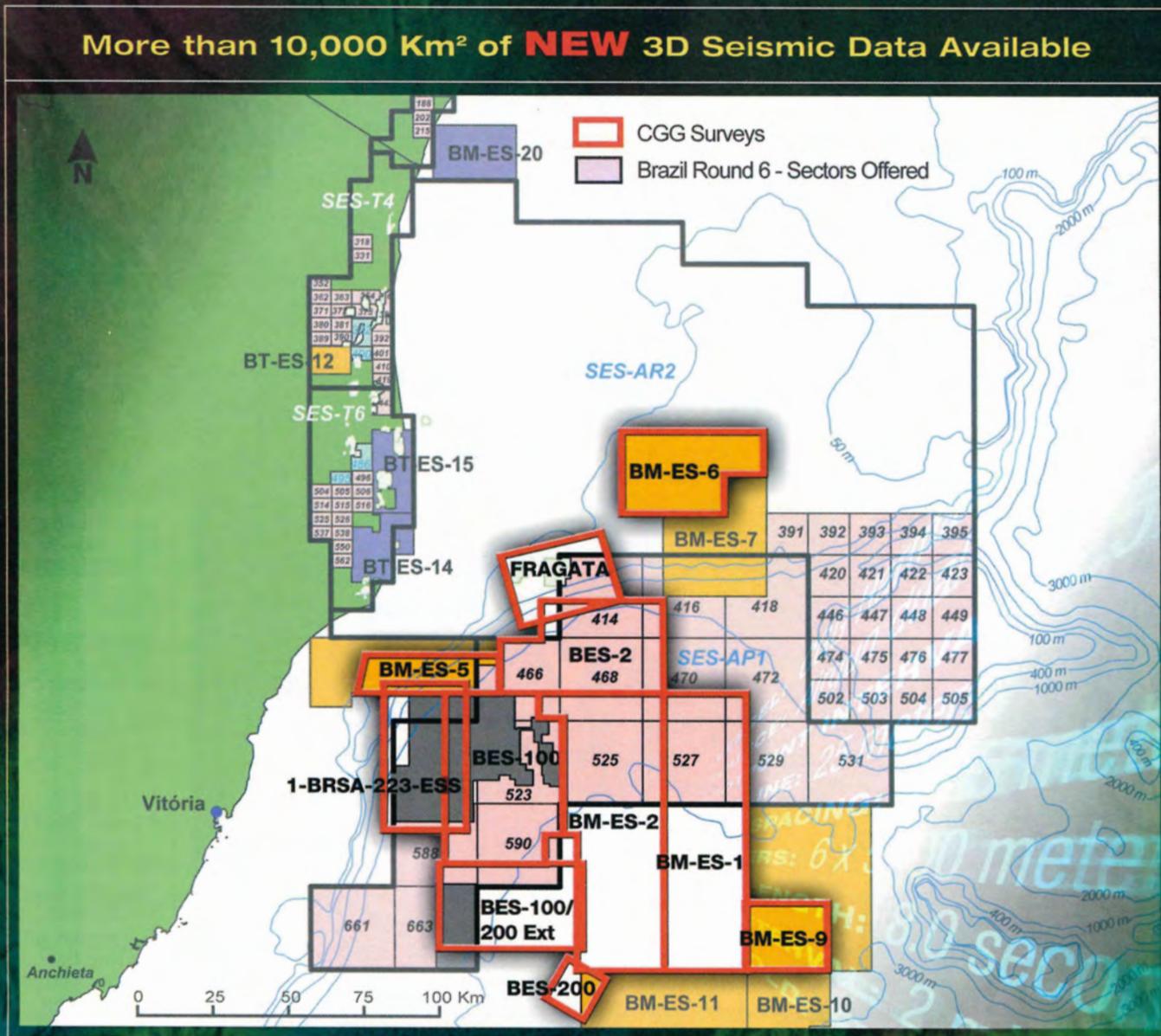
# ROUND 6

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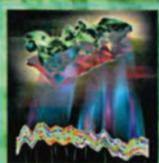
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## Matson, Braunstein Awards Are Announced for Dallas

AAPG award winners have been announced for technical presentations at the recent AAPG Annual Meeting in Dallas.

The winners will receive their awards at the opening ceremony of next year's annual meeting in Calgary.

The 2004 Matson Award, presented for the best oral paper, goes to Marian Warren, with Encana, Calgary, Canada, for "A High-Impact Gas Discovery in a Maturing Basin (Western Canada)."

Warren's paper was part of the session on "North American Provinces: USA, Mexico, Canada - Onshore."

The Jules Braunstein Memorial Award, presented for the meeting's best poster, goes to Mark Allen, Eric Blanc, Clare Davies, Adrian Heafford, Robert Scott, Stephen Vincent and Larisa Voronova, for the poster "Neotectonic Deformation and Hydrocarbon Accumulation in Russia."

Allen is with CASP, Cambridge University, England; Blanc, Davies, Scott, Vincent and Voronova are with CASP; and Heafford is with Jebco, Cheam, England.

The poster was part of the session on "Asia, Siberia and South Pacific."

## President

from page 3

copy version of the BULLETIN will be identical to the electronic version. You currently have the option on the dues card to go electronic or hardcopy. This option will change to reflect mailing costs if you want hard copy.

The hard copy of the BULLETIN will be a double issue, mailed every two months.

✓ To help support hard copy for those members who are financially and computer challenged, we will seek some fund raising. This may be an individual or company type of grant.

The committee also looked at the content of the BULLETIN and recommended the following:

✓ BULLETIN articles should continue to be peer reviewed.

✓ Topics acceptable for the BULLETIN should be broadened to include integrated, multidisciplinary types of papers, including papers covering petrophysics, seismic studies, engineering studies and business and economic studies as related to the exploration/development/discovery of hydrocarbons.

✓ More E&P Notes type of papers are desirable.

✓ A more diverse group of associate editors should be sought and given the additional responsibility of soliciting articles for the BULLETIN.

The Executive Committee accepted all of the recommendations of this ad hoc committee and established a second committee to work on the implementation of the proposed changes (members included EC and AAPG staff). Plans are to be rolling out the new BULLETIN publication regime by July 1, 2005.

\* \* \*

I want to thank John Lorenz for chairing both ad hoc committees and getting all the work accomplished in a timely manner. These changes move us more into the electronic age and will be of great benefit to all of our members. These changes also have major cost savings benefits (elimination of mailing costs, etc.).

\* \* \*

The digital age is upon us and members can expect a lot of exciting products in the near future (e.g. GIS UDRIL - a GIS map-based product that links all papers and figures together - and more papers in *Search and Discovery*, AAPG's electronic online collection of papers, talks, etc.).

You can test-drive the GIS UDRIL product online as well as search for papers in *Search and Discovery* at <http://www.searchanddiscovery.com/>. The BULLETIN Archives are word searchable, which makes finding papers, topics or authors easy. Please take some time to see what is currently online.

All these changes are to bring us into the new electronic, digital age. Most of our sister societies are also moving in this direction.

\* \* \*

Speaking of changes, my year as AAPG president is coming to a close. It has been a pleasure and a privilege and the highlight of my career.

I want to thank my terrific and hard-working Executive Committee: Erik Mason, vice president; Pat Gratton, president-elect; Bob Countryman, secretary; Paul Weimer, treasurer; and George Eynon, chair of the House of Delegates - and the previously mentioned Editor John Lorenz.

Many thanks also to Rick Fritz and AAPG staff members for all of their hard work.

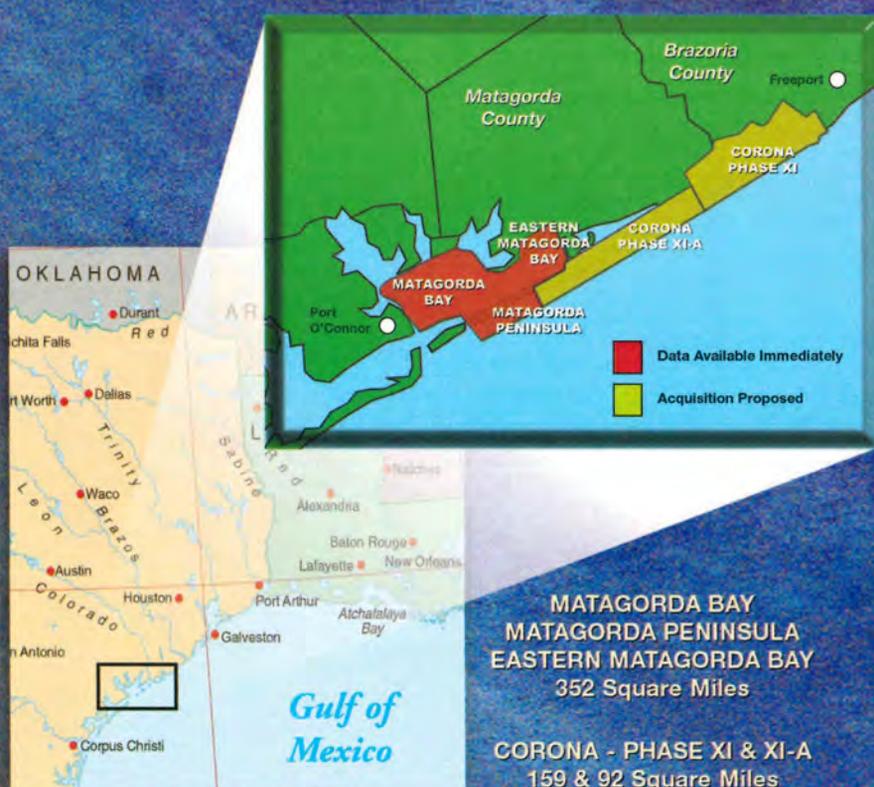
And, best wishes to the new Executive Committee!

\* \* \*

"Change is the law of life, and those who look only to the past or present are certain to miss the future."

- John F. Kennedy

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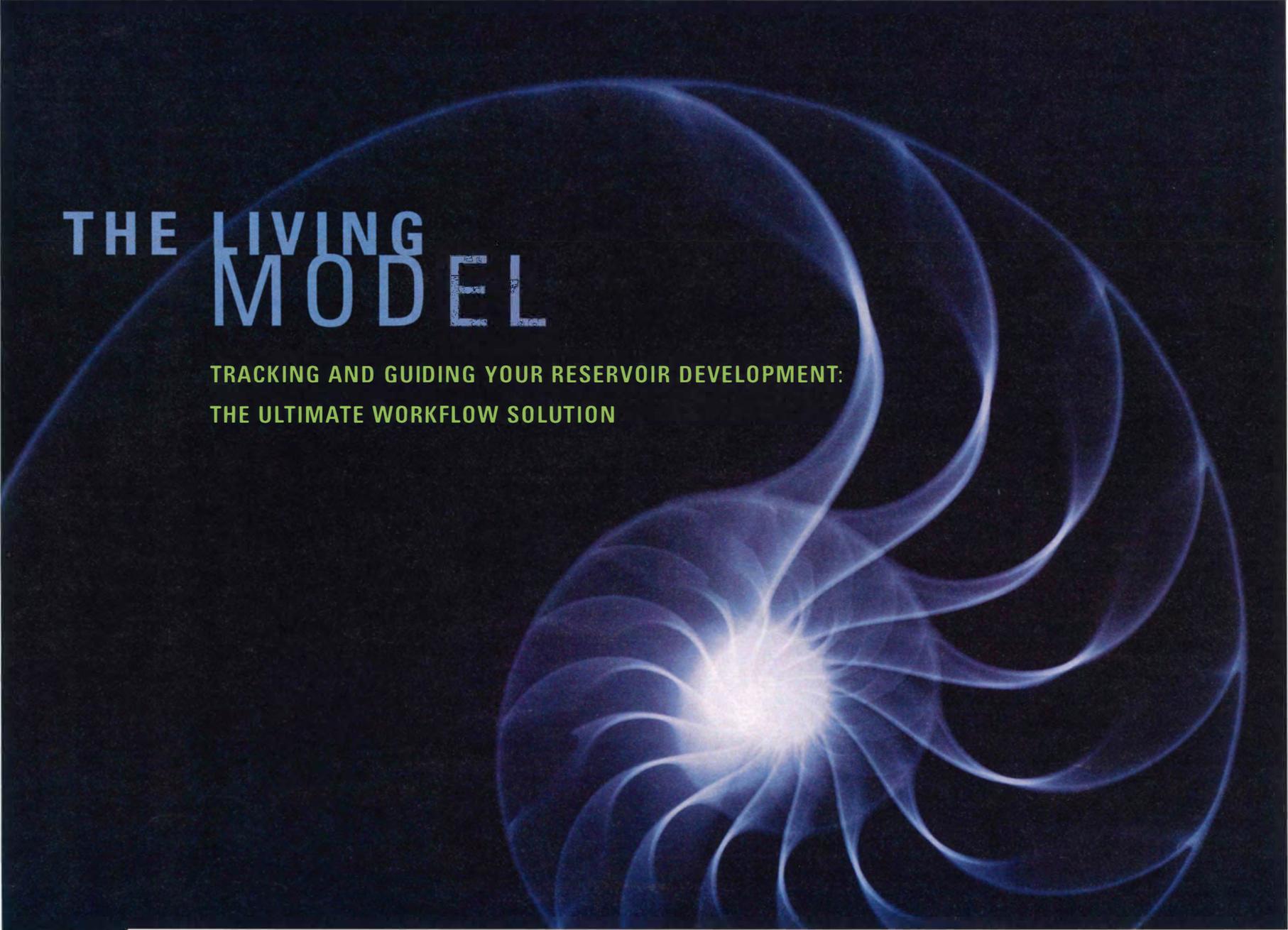
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*Virtual Field Trip Studies Real Geology***Reservoir Modeled From Outcrop**

By LOUISE S. DURHAM  
*EXPLORER Correspondent*

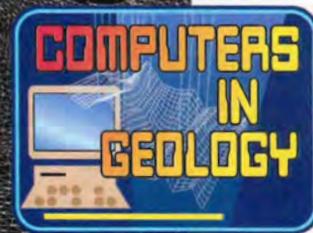
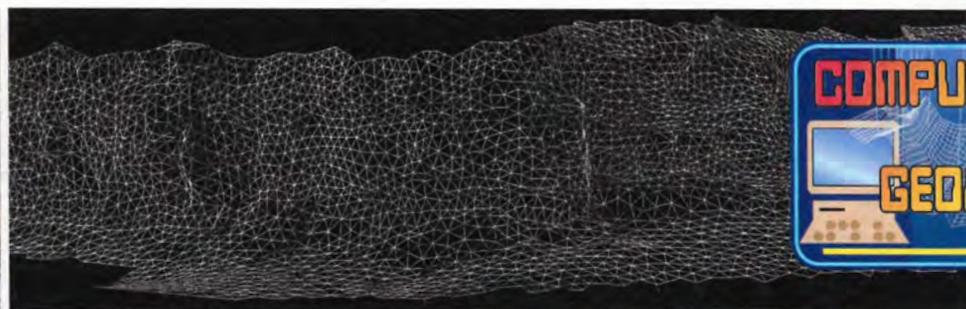
There's nothing closer to a rockhound's heart than the historically edifying field trip, where legions of geologists spend days scurrying up and down the outcrop with rock hammer, hand lens and notebook in hand.

But now, laser technology and high-end computer applications are being used to produce three-dimensional representations of outcrops that have the potential to provide far greater info than ever possible from the old-time surface study.

The basic technology to acquire 3-D outcrop data uses a GPS and a laser-pulse emitting system that receives and measures the laser beam as it bounces off the outcrop. A multitude of points are sent and received, providing an image of the outcrop face. Digital photographs are then draped on the digital terrain models (DTMs also called digital elevation models, or DEMs).

One of the groups pushing the envelope at the forefront of virtual outcrop technology is Norsk Hydro, working in conjunction with the University of Texas at Dallas (UTD).

"We feel our methodology takes this work another step or two further (than others)," said Ole Martinsen, head geologist-sedimentary geology, Norsk Hydro research center. "One reason is that our ambition all the time has been not just to visualize outcrops ... but to utilize that information for reservoir modeling that would directly address critical issues



*Photos, images courtesy of Ole Martinsen*

Researchers are finding that lasers and high-end computers are making photorealistic 3-D digital outcrop models valuable tools.

such as upscaling of geological complexity (where some of the geological reality is lost) and producibility of reservoirs."

Martinsen calls the methodology Virtual Geological Reality, "to capture that what we work with in the virtual world is primary, real geological data."

The Norsk Hydro-UTD effort was

detailed in a poster that was presented at last fall's AAPG international meeting in Barcelona, Spain. That effort earned the meeting's best poster award, and Martinsen and his team of researchers were presented with the Ziad Beydoun Memorial Award during the opening ceremony at the recent AAPG Annual Meeting in Dallas.

**Picture Perfect**

One of the unique aspects of the group's work centers around methodology developed by UTD, where the draping process is accomplished with a resolution of less than five centimeters,

See **Virtual Reality**, page 10

Midland Valley



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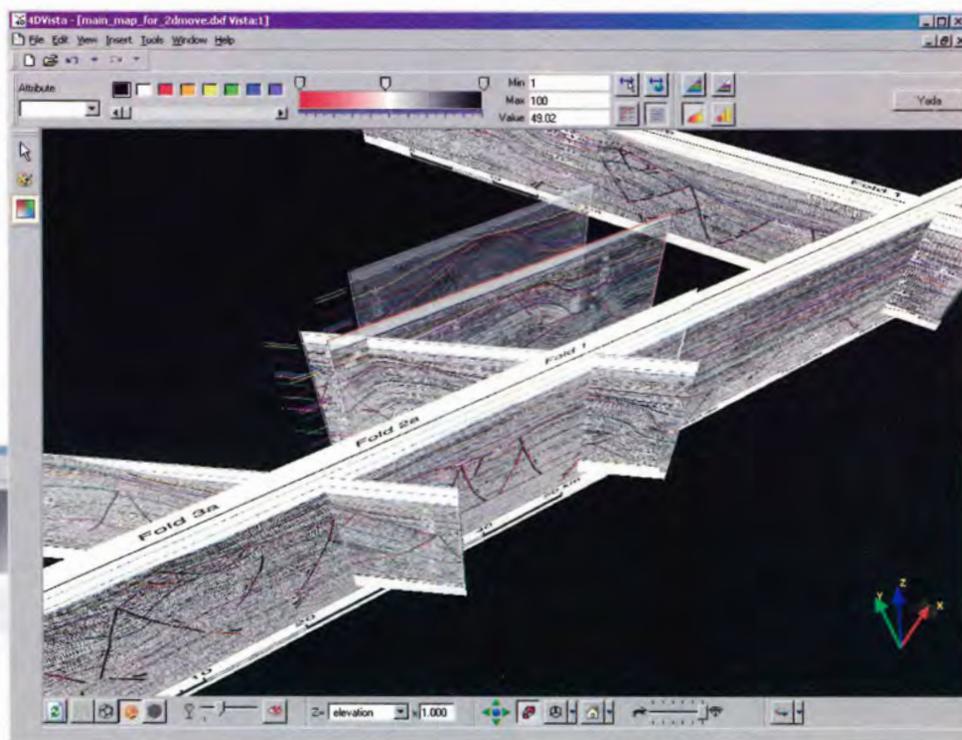
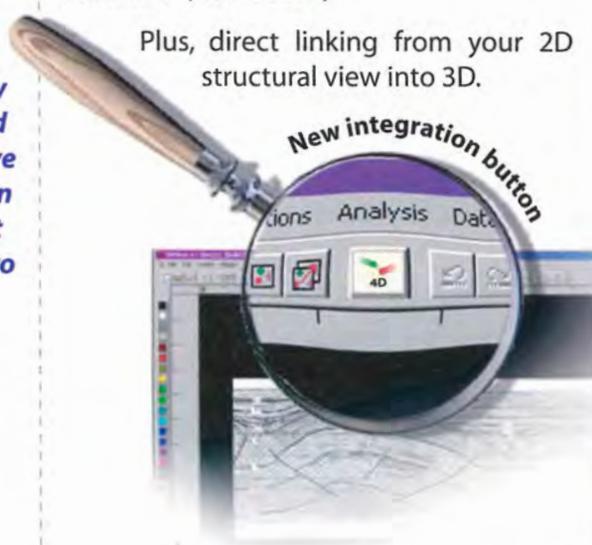
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Sections courtesy of Bruce Trudgill, Colorado School of Mines.

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## Virtual Reality

from page 8

according to Martinsen.

"The UTD procedure makes it possible to decimate/simplify the DEMs and still drape the photography on," Martinsen said, "so that the geological detail is kept in the photographs and not in the terrain models. This makes the photorealistic model possible to handle easily in the (CAVE) visualization center.

"We scan all the points and then cut down on the number of points so the model is much coarser, and the detail is filled in by photographs," said UTD Ph.D candidate John Thurmond, a key player in the ongoing project.

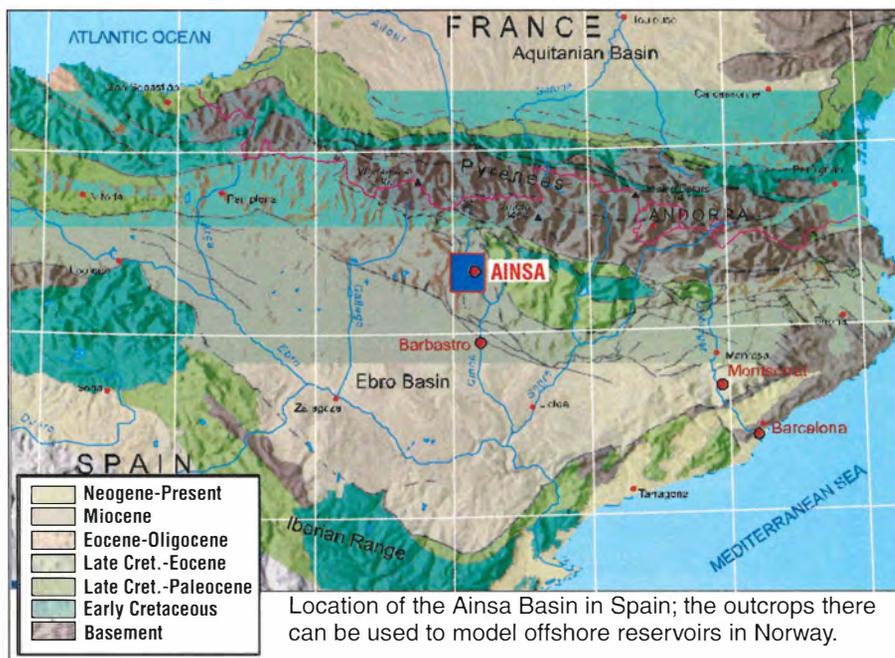
"When you're actually trying to get 3-D, you need a 3-D model behind it," Thurmond said. "The trick is to make the model coarse enough so you can actually use it on a computer, which is what we do."

Despite the buzz about 3-D outcrop scanning work the past couple of years, the consensus among many industry participants has been "this is great, but what do we do with it?"

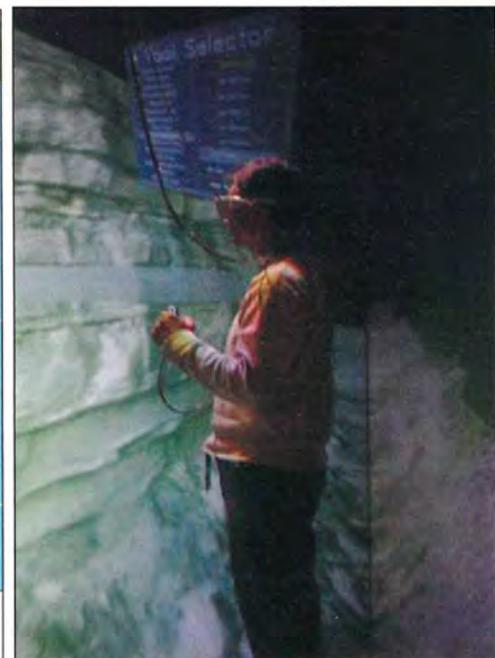
"That's why the poster we won the award for was so important," Thurmond noted. "We used the data to do some interesting things – for the first time building a reservoir model directly from a 3-D model of the outcrop.

"The bottom line is to be able to use the outcrop data effectively and incorporate it with other pieces of data, such as wells behind the outcrop," Thurmond said. "With our approach everything is globally positioned, so we can combine all the data all the way up to regional data and seamlessly drop it all together.

"The poster showed we were able to



Location of the Ainsa Basin in Spain; the outcrops there can be used to model offshore reservoirs in Norway.



tie all the data sets together into the same framework and bring it up all at one time," he said, "and interpret all at the same time, which no one had done before."

### The Ainsa Basin Example

The data used in the project came from the Ainsa Basin in Spain. Noted as one of the better deepwater outcrops in Europe, the Ainsa outcrops are comparable to some of Norsk Hydro's offshore fields and prospects.

Martinsen noted the actual geological complexity in the Ainsa dataset can be used to model reservoirs offshore, such as Angola and Norway.

Thurmond summarized the importance of building reservoir models from outcrop data:

"We're using the data to understand the sensitivities when you build a

reservoir model of the subsurface," he said.

"Typically when you build this model, you build it with very coarse pixels. We're able to use all the detail on the outcrop and all the detail from other data we have," Thurmond said, "and build a very fine resolution model, because we have all the data in 3-D.

"What we're working on now – and will be in the future – is to take that very fine model and pretend this is the truth, and then build coarser models out of it that you would typically build in the subsurface," Thurmond said.

That will allow them to "see where the important factors are and what you really need to understand about the outcrop to build an accurate model in the subsurface," he added.

During a presentation at the AAPG Annual Meeting in Dallas, Tor Loseth,

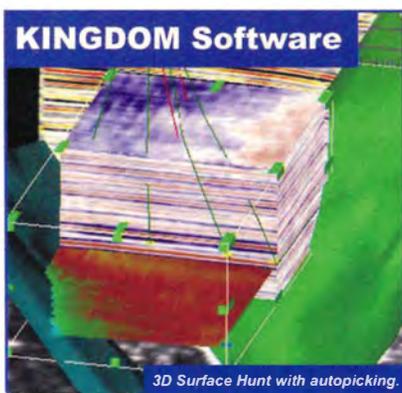
sedimentologist/reservoir modeler at Norsk Hydro, detailed the results gleaned from both a fine and a coarse model built from the Ainsa data:

"When you compared the two, the coarse one had twice as much oil in place as the fine one, where water breakthrough occurred 10 times quicker," Thurmond said. "This would be a pretty scary thing to any oil company, because if you estimate reserves as twice what you have, that's pretty bad.

"The companies want to accurately understand what's going on," he continued, "and the way to do this is to look at it in detail and figure out where you can coarsen and where you can't."

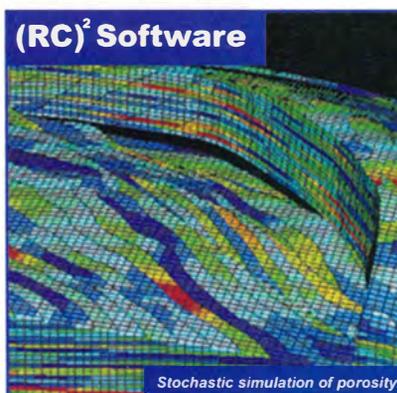
Better reserves estimates and better recovery for the oil and gas companies are the principle goals of the work being done by the team, according to Thurmond. □

# Seismic through Simulation



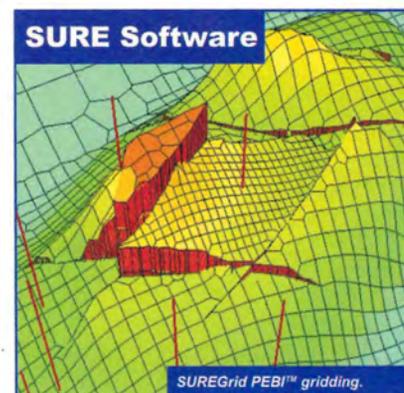
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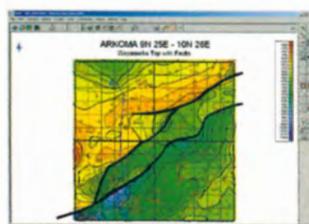
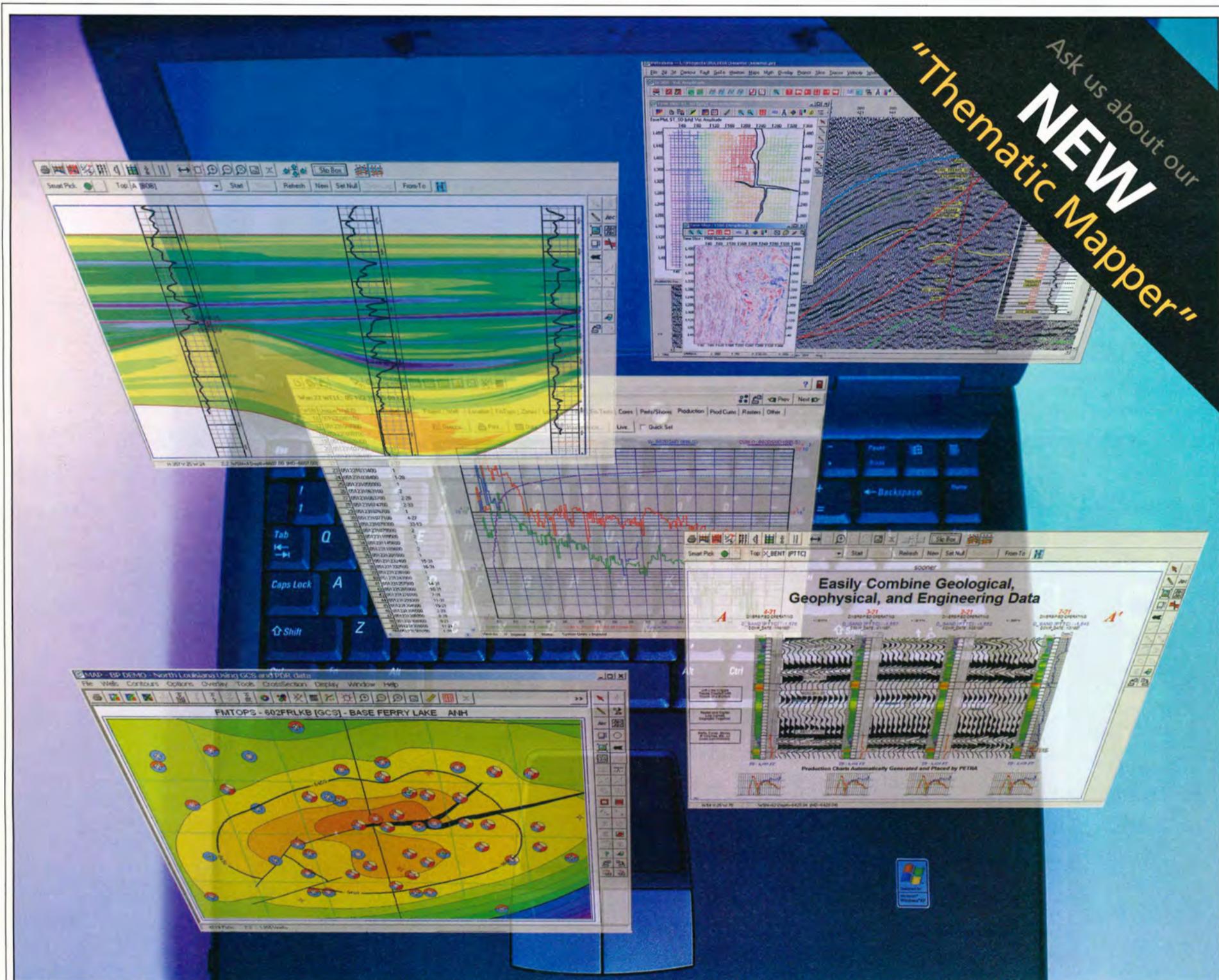
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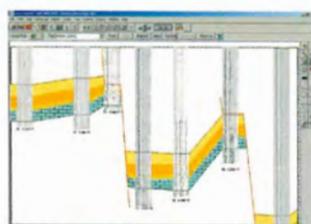
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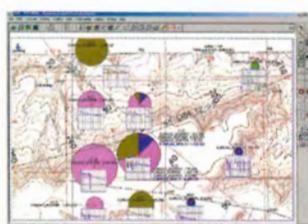
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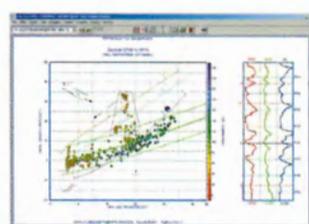
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- Multiple rasters/well
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- Shade between crossover
- Dipmeter data



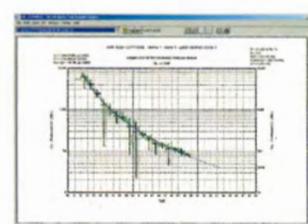
**MAPPING OPTIONS**

- Bubble maps
- Production charts
- Log curves
- Posted data
- Highlighted Symbols



**CROSS PLOTS**

- Log crossplots
- "Z" crossplots
- Lithologies to facies
- Pickett plots
- Regression curves
- User defined overlays



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# Getting Tough With Virus Assaults

Editor's note: Spam – Some like it as a cuisine choice, but it is pretty much abhorred by every computer user subjected to its invasion. This month AAPG's Webmaster and IT department have been invited to get aggressive in warding off the invasion.

By MICHAEL JONES  
AAPG Webmaster

April was a tough month on e-mail users everywhere – every few days, new



Illustration by Rusty Johnson

e-mails were sent to our inboxes from unfamiliar people, often with weird subject lines and unexpected attachments.

We now know that much of that was due to the dozens of variants of two computer viruses, one called MyDoom and the other called Netsky. Literally every few days there was a new version of these threats (and they are still being released at this writing).

May started out no better, although the new virus, called Sasser, does not travel via e-mail at all: If you are running Windows 2000 or above (including XP) and you do not have the proper protection, Sasser can infect your computer without arriving in your e-mail at all!

And although the alleged Sasser author has been caught, new variants by other virus writers are already emerging.

If you haven't educated yourself on Internet security, now is the time – and this article is your starting point.

(Yes, most of the current security threats have targeted Windows PCs because of the large install base, but Macintosh users would be well advised to read on also; several Mac viruses do exist, and virus writers are getting trickier all the time.)

#### E-mail: Be Very, Very Suspicious.

The simplest way to avoid being infected with most viruses is to be very careful with what you receive in your e-mail. A good rule of thumb is never click on an attachment you were not expecting.

Most of the current crop of viruses travel as e-mails with innocuous-sounding subject lines like "Hi," or with interesting-sounding attachments called things like "Joke.doc" or "AnnaKournikova.jpg."

Most virus e-mails will appear to come from someone you do not know – but even if you do know the person, call or e-mail them first to verify that they did mean to send you an attachment.

#### Don't Be a Port of Call.

E-mail defensiveness would have saved you from MyDoom and Netsky, but not Sasser or last year's Blaster worm.

Why not? Because Sasser and Blaster do not travel via e-mail, but through an imaginary doorway into your computer called a "port."

Most computer users do not need any open incoming ports on their PCs (if you do, you already know it). The good news is that many corporate networks (AAPG's headquarters network, for example) are protected by software called a "firewall," which prevents unauthorized incoming ports from the Internet.

The bad news is that your home computer probably is not so protected – and if you access the Internet from somewhere not protected by a firewall, especially if you are using always-on Internet like DSL or cable modems, you need a firewall.

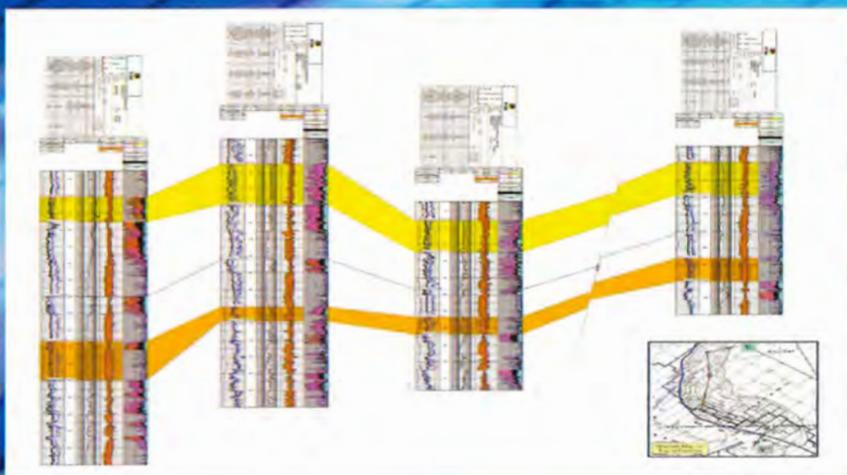
Check your computer for open ports by visiting ShieldsUP! at <http://www.grc.com/default.htm>.

Windows XP users have access to a built-in firewall that will protect them in most cases:

✓ Open up Windows XP Help.

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- Continuing and **expanding support** for **PowerLog**'s current user community
- Advancing direct data links to third-party software such as Openworks, Geoframe and Petra
- Making **PowerLog** available on both Windows® and Linux/Unix platforms
- Including Fugro-Jason's **Rock Physics** functionality (**Largo**) necessary for advanced reservoir characterization.

Mike Barnett and Doug Schmidt (Petcom's founders and principals) will continue to manage the Dallas-based development team. They will be supported in general by Fugro-Jason's Rotterdam research and development group and specifically by the Rock Physics team.

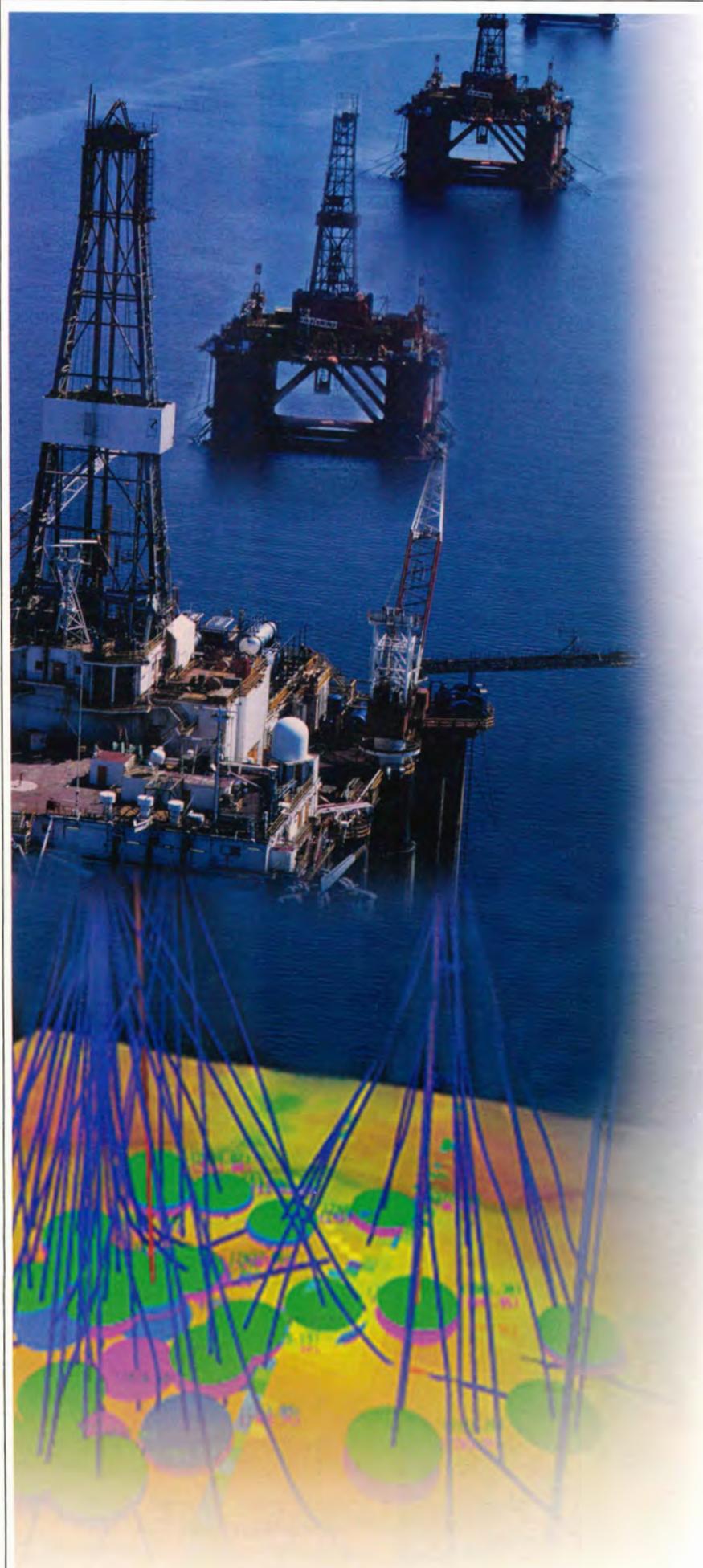
In addition to expanding software functionality, **PowerLog** users will benefit from the Fugro-Jason support network of petrophysicists based in the Fugro-Jason offices around the world. Fugro-Jason has been using **PowerLog** and **Largo** in its consultancy services business since 2001.

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See **Security**, page 14



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**Security**

from page 12

*If you haven't educated yourself on Internet security, now is the time.*

✓ Search for the word "firewall."  
✓ Under "Pick a task," click on "Enable or disable Internet Connection Firewall" to find out more.

Users of other Windows operating systems should take a look at free-for-home-use options such as Kerio Personal Firewall (<http://www.kerio.com>) or ZoneAlarm (<http://www.zonelabs.com>), or other paid options.

(These also will protect you from some human hackers who may try to access your computer via the Internet.)

**Get the Latest.**

Of course, even users of Windows

2000, XP and above were safe from Blaster and Sasser if they had run Windows Update. This neat service from Microsoft makes it easy to install what are called "Critical Updates," which closed the security holes exploited by those two viruses weeks and months before they were written.

To run Windows Update, get online, open Internet Explorer and select Tools | Windows Update from the menus at the top of the window.

In general, you should always install anything labeled "Critical Update," and only install other updates if you

need them.

You also can ask your computer to automatically download Critical Updates when you are online:

✓ In Windows XP Help, search for "Windows Update."  
✓ Under "Pick a task," click on "Turn on automatic updates" (users of other versions of Windows should be able to find similar information in Help or online).  
The Sasser virus exploited something that had been patched by Microsoft only weeks before, so it pays to run Windows Update as often as once per week.

**Squash the Bug.**

Of course, there is no way to know what will come up in the future, so having good antivirus software and making sure it is up to date is crucial.

Some free products for Windows home users are AVG Anti-Virus (<http://www.grisoft.com>) and AntiVir Personal Edition (<http://www.free-av.com>).

In a pinch, a couple of free options that you can run online without installing anything are McAfee FreeScan (<http://www.mcafee.com/myapps/mfs/>) and PC Pitstop Antivirus (<http://www.pcpitstop.com/antivirus/>).

Check, because you may have a version of McAfee Antivirus or some other product already installed on your computer – but if it is expired (if its virus signatures are not up to date) it is not doing you any good and you should either pay to get the latest virus definitions, or uninstall it and get one of the free offerings.

Be sure you understand how to update your signatures, and do so at least once a week. Most of these products will even tell you how to remove any viruses that might be on your computer already.

**Rat Out the Spy.**

"Spyware" is a term that has become more and more common; it refers to software on your computer that "phones home" by sending information to the spyware writer without letting you know what it is doing.

This sounds like a virus, and indeed it is "like" a virus, with the difference that spyware is not trying to damage your computer, and if you have some you probably installed it yourself with some other free software you installed.

You can find and remove spyware using products like Spybot-Search & Destroy (<http://www.safer-networking.org/>) or Ad-Aware (<http://www.lavasoftusa.com/>).

Again, be sure you understand how the software works, and keep your signatures updated. Spyware is not as much a threat as a nuisance; it makes your computer run slower and can slow down your Internet connection as well.

**Be Informed.**

Information is power, and there are a number of ways to be informed about current security issues facing computer users. Sign up for one of the U.S. government's security e-mail bulletins (<http://www.us-cert.gov/cas/>) or Microsoft's security alerts ([http://www.microsoft.com/security/security\\_bulletins/alerts2.asp](http://www.microsoft.com/security/security_bulletins/alerts2.asp)) to receive the latest right in your inbox.

**The "Rest of the Story."**

For the Mac OS user, a stop at Apple's site is a great place to start. Simply follow the "Support" button and type "virus" into the search engine. This search yields informative information about this system's built-in firewalls and other security and software update options.

Of course, a quick Google search will find firewall and antivirus software, and probably anti-spyware software as well, for just about all other operating systems available to the PC user.

Regardless of the system you may be using, now is the time to get out there, install the latest security patches from your operating system's manufacturer, get antivirus and firewall software and compute more safely!

Good browsing!

(AAPG Web site editor Janet Brister provided information for this story.)

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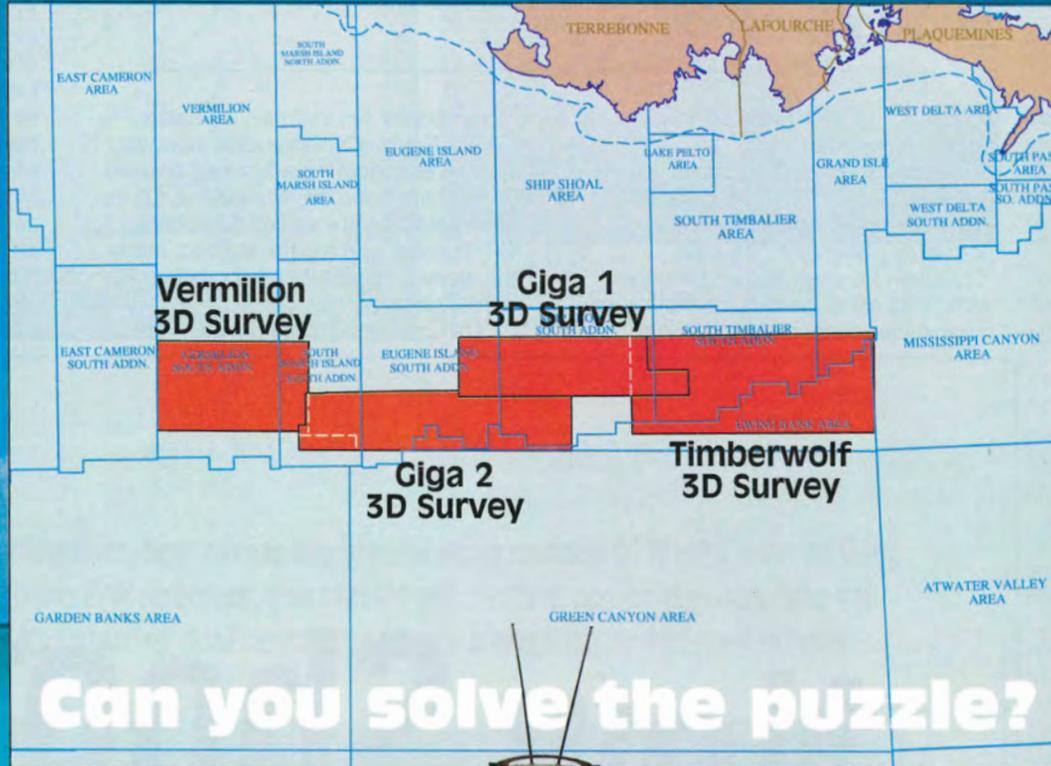
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*Eastern New Mexico Lease Play***Elevator Sub-Basins Draw Interest**

By KATHY SHIRLEY  
*EXPLORER Correspondent*

While rank exploration in the lower 48 states is becoming as rare as a rainstorm in the desert, some areas in the continental United States remain rarely touched despite their exciting potential for oil and gas reserves.

For one such area, that may be about to change.

A genuine exploration play seems to be gathering steam in eastern New Mexico, thanks to some good old fashioned geologic detective work by professionals at the state's Bureau of Geology & Mineral Resources.

Ron F. Broadhead and his bureau colleagues have developed a new geologic interpretation of the Tucumcari Basin that shows great promise for oil and gas exploration – and based on those findings, several independent companies are staking claims in what would be the basin's first sustained drilling program.

Broadhead calls the basin, which has four discovered but unexploited occurrences of oil and gas, "prime hunting ground."

One reason for the general neglect of the region is the area's Santa Rosa tar sands – briefly produced in the 1930s for road surfacing material – which led to an opinion of some operators that the basin contained only heavy oil in shallow zones, which would never amount to much.

Sporadic activity occurred over the next four decades, but since the early 1980s the basin was dormant until the turn of the century, when Broadhead's 20 years of geologic study in the area attracted attention.

**A Lift from the Elevators**

So what has the New Mexico Bureau of Mines and Mineral Resources determined that could change the fortunes of the Tucumcari Basin?

The most important finding was that favorable source rocks and reservoirs are present in elevator sub basins, where the depth to Precambrian may exceed 12,000 feet.

"Recent activity has been prompted by recognition that there is potential oil and gas resources in the basin," Broadhead said. "We have done a fair amount of research that indicates there are significant mature source rocks within these elevator sub-basins."

And that is "always the big question in modern exploration," he added. "Do you have a source, do you have a reservoir and do you have a trap?"

"Certainly the documentation of thick mature sections of organic rich source rocks in the elevator basins – combined with all the shows that have been encountered over the years and heavy oil in Triassic-age reservoirs – indicate that a significant amount of hydrocarbons have been generated in the Tucumcari Basin," he said.

"That, in conjunction with a virtually wide open lease play where a small company can lease fairly large amounts of acreage relatively inexpensively and a strong gas market makes this region attractive."

**Significant Source Rocks**

Most recently Broadhead and his colleagues have focused on identifying the potential of source rocks in the Tucumcari – work that has helped touch off the current interest in the area.

According to him, the Pennsylvanian

*"The wells drilled to date confirm our geologic model."*

sediments contain the most significant petroleum source rocks.

"Underlying Mississippian strata, although thermally mature, contain insufficient total organic carbon for petroleum generation," he said. "Shallower Permian age and younger sediments either contain insufficient total organic carbon for major petroleum

generation or are thermally immature."

The Pennsylvanian shales, however, contain enhanced levels of total organic carbon within the elevator basins. On the shelf areas the shales typically contain 1 to 2 percent total organic carbon, but in the elevator basins they contain 2 to 10 percent total organic carbon.

Thin coal beds also contributed to

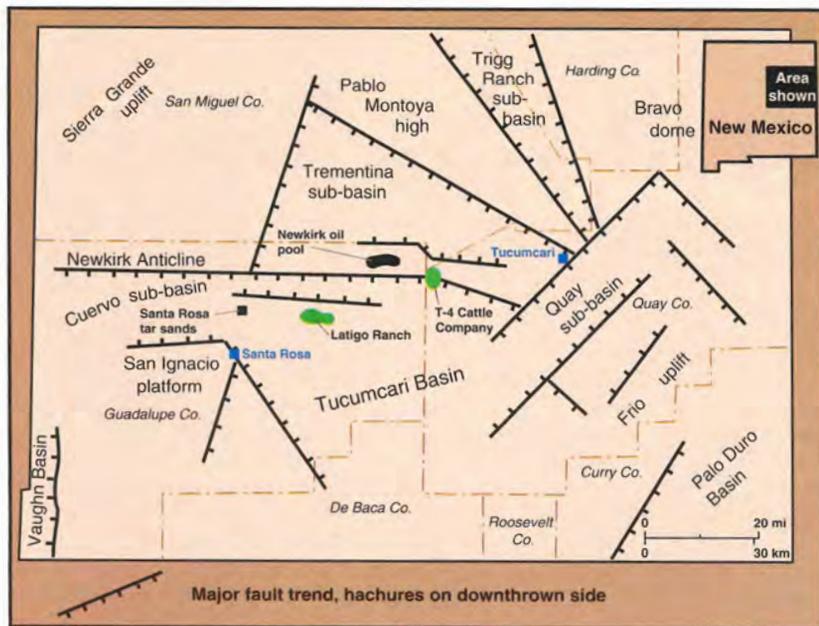
hydrocarbon generation in the elevator basins. Thermal maturity of the Pennsylvanian source rocks is higher in the elevator basins due to greater depth of burial. In the elevator basins most of the Pennsylvanian section is in the oil window, and in the deepest areas those sections may be in the condensate-wet gas window.

On the shelf areas, Pennsylvanian sediments are only moderately mature to mature and are generally in the oil

continued on next page

# Now Shooting:





Map courtesy of Ron Broadhead, photo by Steven Moise  
After years of inactivity, New Mexico's Tucumcari Basin is drawing much attention.

continued from previous page

window's uppermost part. The basin's heavy oil was thought to have been generated in Pennsylvanian source rocks and migrated into basal Triassic sandstones through major high-angle faults that form the elevator basins' boundaries.

After emplacement of the oil, it was biodegraded.

Broadhead cites several analogous occurrences of oil and gas from an elevator basin, including:

- ✓ The Rhombochasm Field, which was discovered in 1989 in the Broken Bone graben on the Matador Arch in central Texas, produces from a similar setting.

- ✓ The Wolf Flat Field, which produces from the southern rim of the Palo Duro Basin.

**Independents' Day**

This greater understanding of the elevator sub-basins is a big reason why several small independents have flocked to the Tucumcari.

"We have seen, among other things, a large lease play develop in the basin with several companies participating," Broadhead said.

The most currently active companies are Yates Petroleum, Coulthurst Management and Ceja Corp. Other active parties include Ace Petroleum, Roy Barton, Blanco Corp., Caza, CKG Energy, David Petroleum, DMT Energy, Ben Donegan, Ibis Petroleum, Inter-American Corp., Pitch Energy, Charles Reynolds, SDX Resources, Craig Settle, Strata View, Gene Wilson and Xeric, as well as local ranchers and land holders.

"Today large parts of the basin are under lease," he said.

So far three different companies have actually drilled wells:

- ✓ CKG Energy has drilled several wells, and most have reported promising occurrences of gas and light liquids.

"I don't know what they have established as far as production tests," Broadhead said. "We do know they have flared gas and had shows on the mud logs."

The wells went to about 7,000 feet in the Lower Canyon.

- ✓ Coulthurst Management in association with Gene Wilson drilled a well and reported good shows, and is now drilling a second well.

Rig limitations precluded both companies from drilling to the Precambrian.

"Expect the most mature source rocks to be present in the deeper parts," he said. "Although these wells did not test the lower Pennsylvanian section, it should be favorable."

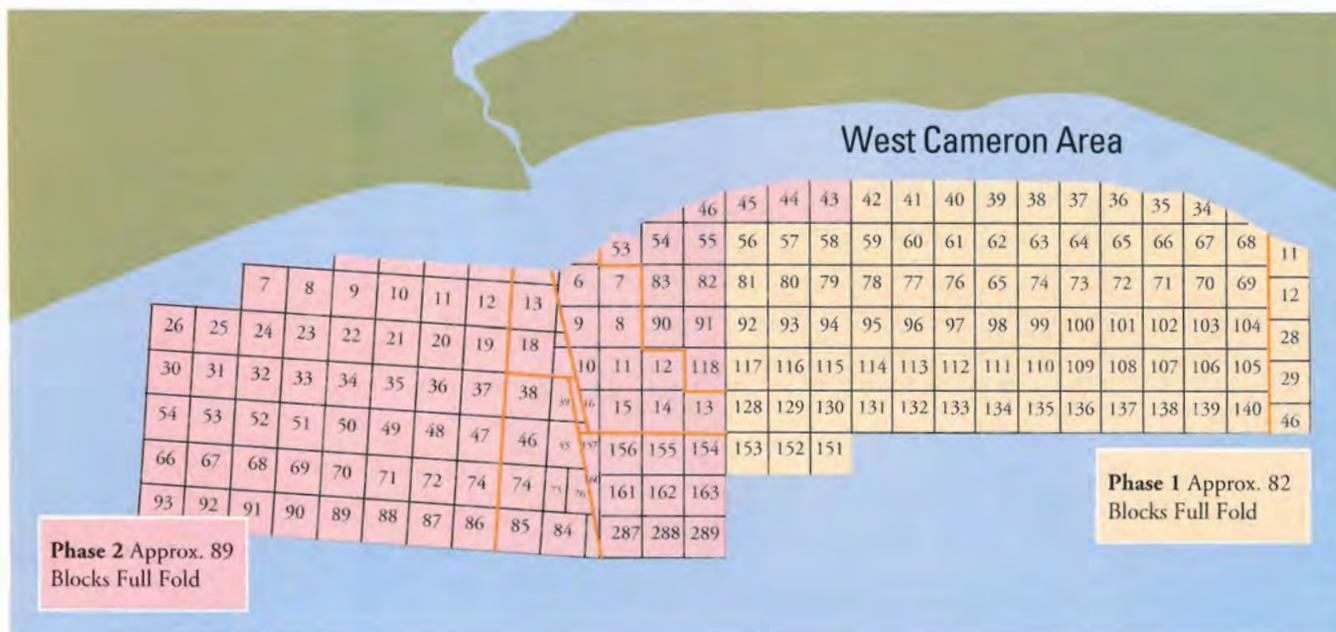
Yates Petroleum has recently drilled a couple of wells, but results have not been released. Other operators will likely follow suit, "particularly if production can be established," Broadhead said. "The wells drilled to date confirm our geologic model."

The encouraging aspect of this round of activity is the number of operators taking a position.

"This time we are not dependent on one operator to drill wells," he said. "All these companies are pursuing their own ideas concerning reservoirs and traps, which increases the chances of seeing several wells drilled based on a variety of concepts."

"That is something this basin has never seen," he added. □

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Record Length	13 sec.
Active Receiver Lines	2
Max Inline Offset	9000 m
Max Xline Offset	440 m
Bin Size	25 x 40 m
Fold	120

Acquisition Comparison	Existing Data	Newly Acquired Data (2004)
Record Length	8 sec.	13 sec.
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*'Found Oil Money, Send Money'*

# Who Are You Getting in Bed With?

By KATHY SHIRLEY  
*EXPLORER Correspondent*  
Independent geologists need to generate good ideas – but good ideas go only so far.

To succeed in today's world independents must couple scientific knowledge with business savvy – and much of that business acumen must be centered on where and how to generate financing.

Business knowledge is so important for today's geologists that professional societies are offering myriad courses, presentations and technical sessions covering the dos and don'ts of energy

business and financing. That includes AAPG, which at the Dallas AAPG Annual Meeting placed oil and gas financing center stage for a DPA forum on "Technical, Business and Ethical Challenges for Independents and Consultants."

Since investors are looking for future returns, a look at the future pricing is always part of the financing conversation.

Richard G. Green, with LaRoche Petroleum Consultants in Dallas, said the history of the oil industry has repeated periods of both low and high prices – and there is no reason to believe the future will hold a different scenario.

Except, that is, for the whale of a wild card in the form of the "Hubbert Curve" theory of declining supply, which will throw price equilibrium into an upward who knows what.

For the short term, Green sees oil prices entering a new pricing plateau of around \$40 as a baseline. He also projects prices at or near \$60 in about three years or so, which will cause a number of factors to kick in, including the spark for increased alternative energy sources such as oil shales, tar sands, and gas-to-liquid technologies to become economic supply sources.

Other speakers also offered advice

and experiences in the business side of geology. Here's a sampling of what three of them had to say:

**Go Outside the Box**

Obtaining capital to finance a project or start-up company can be as difficult as developing a prospect or putting together a well-rounded management team, said Edward P. Travis with LaRoche Petroleum Consultants.

"It is important for independents to have a clear vision of their idea or project and which of the various types of debt structure is the best fit," he said.

Travis outlined several types of financing best suited to independent geologists during his talk, "How Much Can I Borrow? The Fundamentals of Energy Financing."

The four primary financing options include:

**Traditional bank debt.**

"This is ordinarily low cost money, tied to the prime interest rate," he said, "but the problem is banks won't advance you a whole lot of your project's worth. For instance, if an independent geologist values a project at \$3 million, a bank will only finance 50 to 70 percent of that – and only then if it is less risky reserve capital."

**Mezzanine debt.**

With this, independents typically get a greater percentage of a project's value – but the project has to have a lot of development opportunities.

"This is riskier capital than traditional bank debt, because these lenders put more constraints on you," he said. "If you are not successful they pick up more ownership and control in your company, which means these groups are willing to fund a riskier project."

This option requires a project with a lot of success potential, he said, but "if you are successful, mezzanine debt is normally paid off in a relatively short time."

**Private equity.**

This can involve family, friends, private investors or venture capitalists who are typically investing in a proven management team – and they typically want you to invest your own money as well.

"This option takes money to get money, and you have to have a relatively proven track record," he said.

**Industry joint venture capital.**

With this, you bring a company an idea and they fund your share.

"This is expensive money," Travis said, "because the other company is putting up the capital. But it does allow you over time to develop a track record, which is important to attract other types of capital."

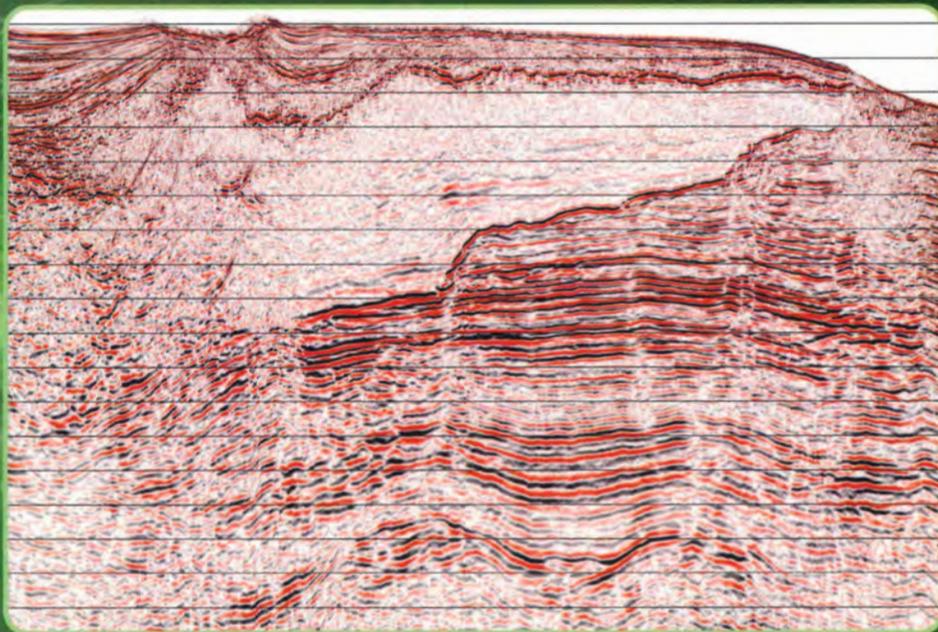
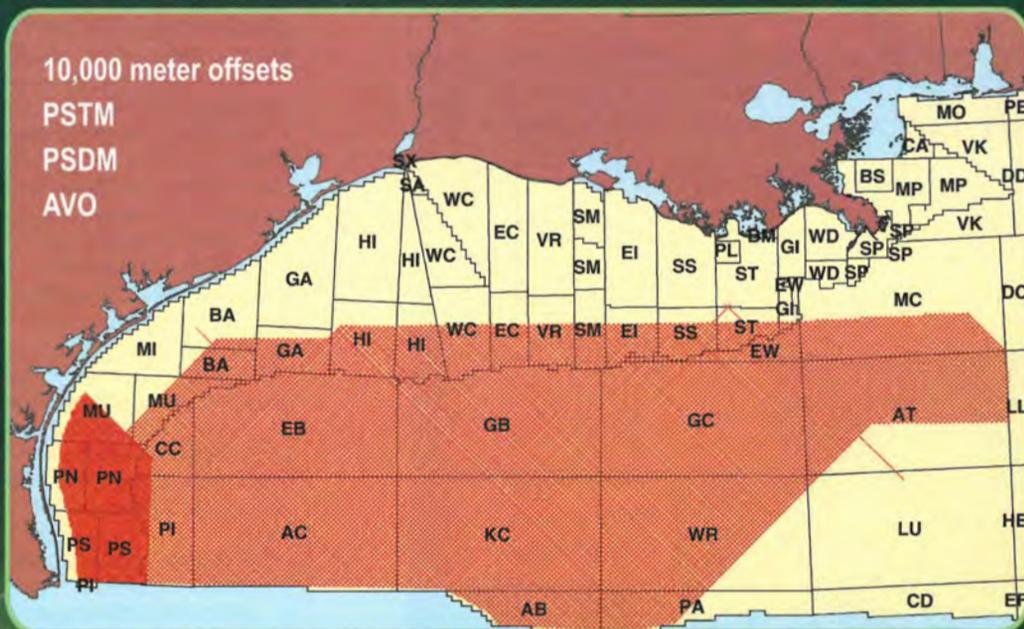
Travis also offered examples of projects and which financing options would be best suited for each:

✓ For an evaluation geologist or engineer who is buying producing properties or overrides in properties – something that is already on line – "you are going to have a difficult time getting mezzanine funding," he said, "because there are not a lot of development drilling opportunities. Traditional bank debt is likely the best choice for this type of program."

✓ For an independent geologist who has identified a lease with one producing well and three offset well locations with potentially untested fault blocks adjacent to those locations, "the local bank is not the place to go," he said. "This type of project is too high risk for traditional bank debt, so the best bet is mezzanine

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See **Business**, page 24

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*Mood High for Annual Meeting*

# Smiles, Program Shine in Dallas

While the numbers attending may have been mildly below projections, the mood and the technical aspects of the AAPG Annual Meeting in Dallas exceeded expectations.

Buoyed by the highest crude and natural gas prices in a decade, the over 5,100 attendees from 77 countries were drawn to the technical sessions, where the program committee put together a heavyweight curriculum.

"The excellent technical program is what made this meeting memorable for attendees," said Terry O'Hare, the meeting general chairman who also headed an impressive fund-raising effort to help underwrite many meeting activities.

"A lot of money was raised through sponsorship," he said. Also, in his view the meeting succeeded because it was "well organized and had a good theme."

That theme, "Embrace the Future, Celebrate the Past," was highlighted throughout the technical sessions, which were described by one of the volunteer judges as "the most impressive set of papers we've ever had."

In addition to the papers and posters, attendees had plenty to see, hear and learn about on the exhibits floor, where displays from 164 companies and 60 non-profits featured the latest in industry technology and services.

Also included in the exhibits hall was



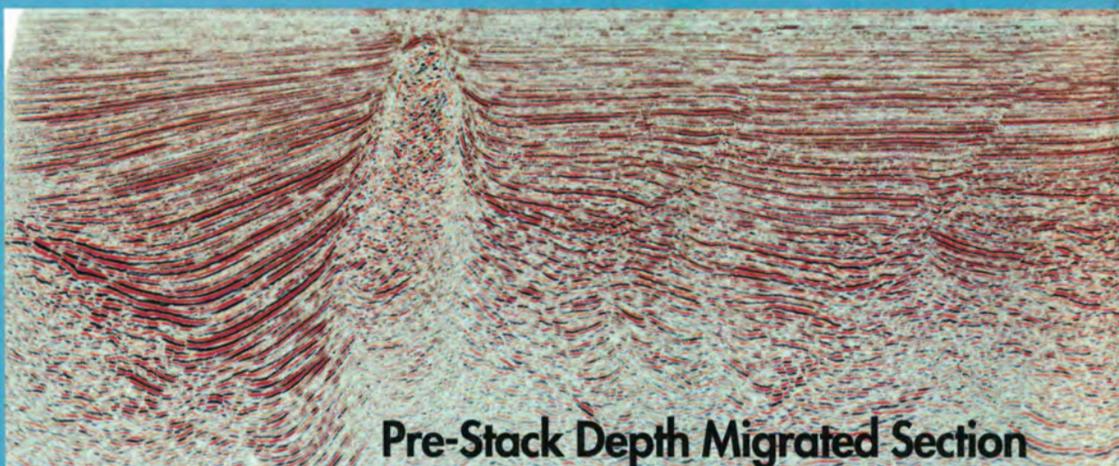
President Steve Sonnenberg, at left, opens the annual meeting that included a busy exhibits hall and poster sessions.

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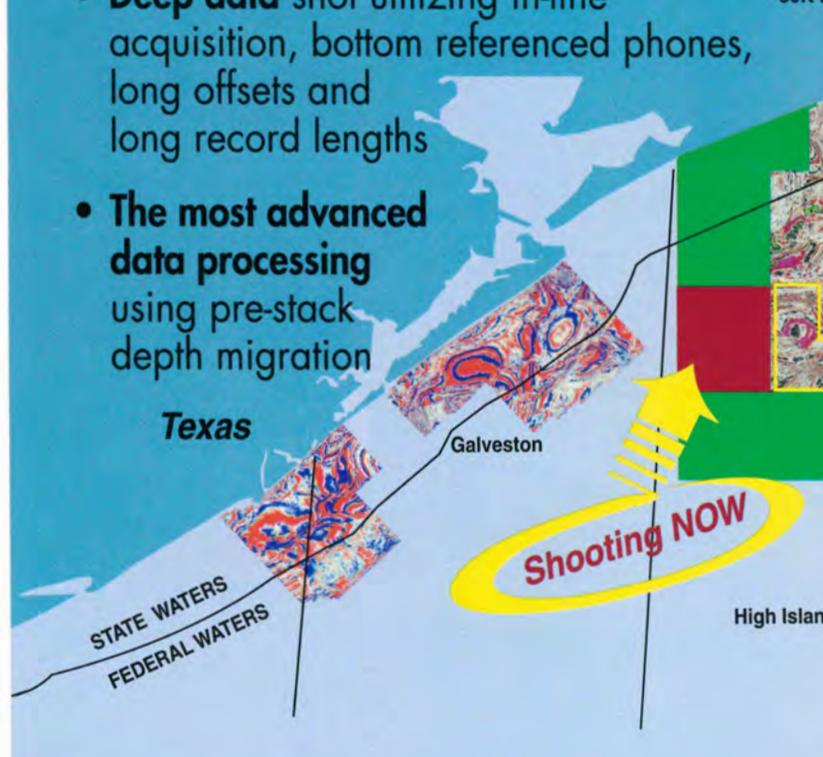


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the International Pavilion – a busy place, with 37 countries exhibiting, among them Vietnam and Afghanistan, both making their first appearance at an AAPG annual meeting.

International registrants totaled 810, or about 18 percent of the attendees.

The meeting also featured seven field trips and 10 short courses – and, in another of the meeting's special touches, attendees were given a first-class athletic bag to tote around session notes.

As usual, the meeting officially started with the opening ceremony, a standing-room-only event where AAPG President Steve Sonnenberg delivered a keynote address that focused on ethics and professionalism.

Sonnenberg noted in his address that education, such as that provided at an annual meeting, is a vital component of competence, a cornerstone of being a professional.

Sonnenberg also noted the other cornerstone of integrity – you "must have a code that you can live by," he said – as a base on which the pyramid of professionalism layers to a capstone of enthusiasm.

That enthusiasm was very much in evidence in Dallas, including the loud and long ovation given to Larry Funkhouser as he received the Sidney Powers Medal, AAPG's highest honor.

Funkhouser was one of 37 people who were honored for their contributions to the profession, science and the Association. □

## Pickens Makes a Splash for DEG

# Oilman Mixes With Water

By KATHY SHIRLEY  
EXPLORER Correspondent

T. Boone Pickens joked that it took 25 years for him to be asked to speak at an AAPG annual meeting – and when the opportunity finally arose the topic was water, not oil and gas.

"I was asked to speak at the AAPG convention 25 years ago, but that didn't work out, so when I was asked this year I figured I better take you up on it because if 25 more years pass I might not get another chance," he teased.

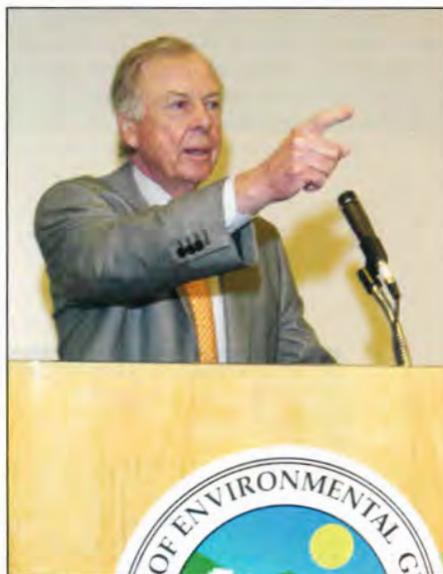
Pickens, one of AAPG's higher profile members, spoke at the Division of Environmental Geology luncheon in Dallas about his role in developing and exploiting water resources on his land.

"I consider myself to be an environmentalist, and when the water situation in Roberts County (Texas) came up I was certainly aware of and sensitive to the environmental aspects of this business opportunity," he said. "While I want to help my neighbors and myself make some money on this deal, Roberts County is my home and I have just as much interest in protecting the resources of the area.

"People have said, 'Pickens is going to turn the area into a Dust Bowl.' Do they really think I'm that stupid? I'm not going to sell all the water and not have enough to run my operation. I have a golf course on my ranch, so I use a lot of water," he joked.

In fact, Pickens said his group, unlike some others, is bound by an agreement to only draw down the water

*"This is the only place in the world I ever drilled that I couldn't drill a dry hole. If I drill for water, I get water."*



Pickens

reservoir by 50 percent.

Pickens detailed his seven-year odyssey to sell surplus water from a four county area in the Texas Panhandle.

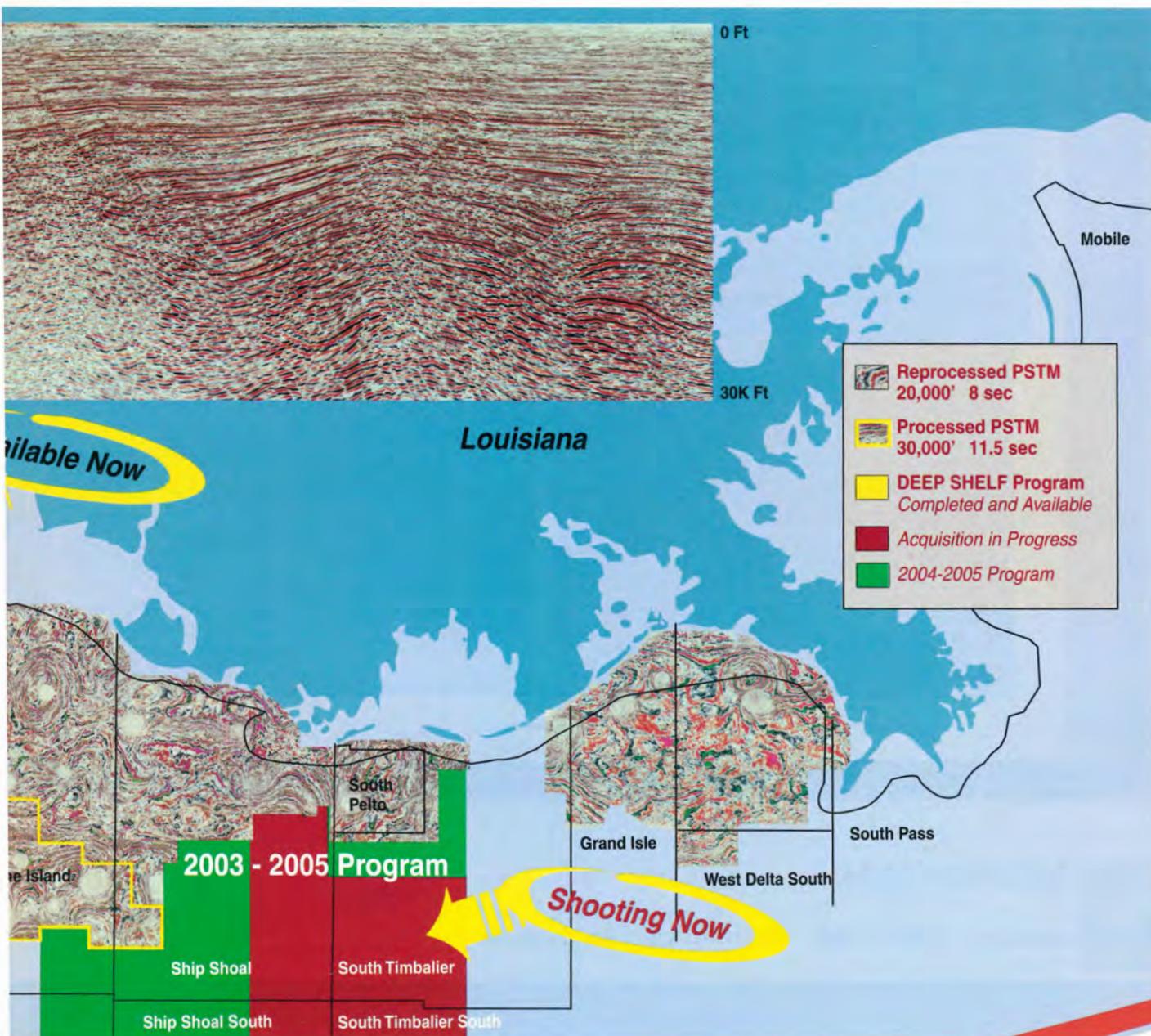
"When the prospect of selling water

first surfaced in 1997, people asked me if I thought the water would be worth much. I said I thought it would be worth more than the oil – a pretty safe call since there isn't any oil in this part of Texas," he said. "This is the only place in the world I ever drilled that I couldn't drill a dry hole. If I drill for water, I get water."

Pickens appreciates his ability to draw attention. He said Time magazine and the news show "60 Minutes" came to Roberts County looking for a story on the water deal.

"While this is certainly not a sensational news scoop, the sweetest part of this story is the benefit to local landowners," he said. "Today we have 400,000 acres signed up in Roberts County, encompassing 200 landowners. If we sell this water for \$500 an acre, that will amount to about \$1 million per family. That's big.

"I really want to make this deal for these folks," he continued. "I don't need the money as much as my neighbors do, and I have told them we will stick together. These are huge numbers to people who I think deserve to capitalize on their assets." □



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## Same Talents, Different Venue

## Oil Finder Shifts Focus to Writing

By BECKY DICKENSON  
EXPLORER Correspondent

It all started so early. Gary Penley, a geologist who has experienced several extraordinary achievements, did not have what most would call an ordinary upbringing.

Raised by his mother and grandfather on a cattle farm in the remote area of Clay Creek, Colorado, Penley nurtured a tenacious curiosity that would later lead him to profound discoveries both on and off the oilfield.

On the oilfield, the discoveries were prolific, and if they were the sum total of his accomplishments over the 30 years he explored as a petroleum geologist, they are enough to place him in the upper echelon of petroleum geologists.

Off the field? There's more, much more, in Penley's personal biography – experiences that range from literally the depths of the oceans to the tops of the mountains – and including his recent successful career as an author.

Penley, like so many other AAPG members (see accompanying story), has gained national celebrity as an author – not a writer of geologic or technical papers, but of novels, memoirs and non-fiction exposés that have been called dramatic, compelling and important.

His style is self-taught, and his books, even the novels, come out of his personal experiences and are "from the heart," he says – which makes that childhood in a dirt-floor house even more remarkable.

His childhood home was a study in simplicity. With no electricity, few modern conveniences and a sparse existence, Penley spent most of his time working beside his beloved grandfather, a man he describes as "a real life John Wayne who picked himself up by his bootstraps and – at the age of 60 with virtually no money – cultivated a thriving cattle ranch."

That setting, Penley says, fostered in him a deep connection to the land, and a boundless need to solve nature's mysteries.

#### Detective Story

Shortly after his grandfather's death, the teen-age Penley left his boyhood home and entered the U.S. Navy, where he soon discovered a penchant for intricate mechanical operations.

He spent six years on a nuclear submarine as a mechanical nuclear power plant operator – an experience that gave him the confidence to enter Weber State University and begin his studies.

"Because of my upbringing, I was going to be a forestry major," Penley recalled, "but I took one physical geology course, and I was hooked."

So hooked, in fact, that he completed the master's program at the University of Kansas in record time, then set off on a 30-year career as a respected petroleum geologist.

Over the years, Penley established himself as a proven practitioner of development geology throughout Kansas, Colorado, Texas, Oklahoma and the Gulf Coast regions. In a career filled with accomplishment, Penley:

- ✓ Developed 11 geologic basins.
- ✓ Discovered a field in northwest Kansas that produced over 314 million barrels of crude.
- ✓ Worked with a team of Amoco geologists that hit its reserve replacement for a year in only six months

*"Petroleum geologists are essentially detectives. It's half science and half art, and they are unique individuals."*

of drilling – all largely due to his exploration and development work.

"(He's) a grease seeker who knows how to find it," said former colleague and current AAPG geoscience director Jack Thomas, "a true marvel with amazing focus that serves him extremely well in

all areas of his life."

Penley's response to such praise is humble as the man himself, noting that his colleagues are all gifted with an

continued on next page



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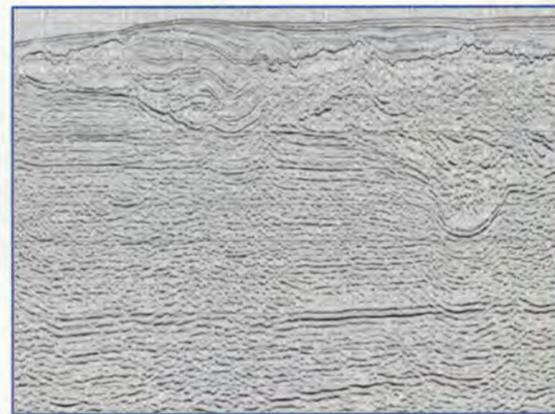
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# Imaginations Go Beyond Geology

Question: How many AAPG members have second (or third?) careers as authors?

Answer: More than we'll ever know.

But past AAPG President Robert Cowdery, after a conversation with AAPG member and author Richard McCullough of San Antonio ("Fish Tales, Etc.") was intrigued enough to try to find at least part of the answer.

With the help of dozens of people and groups, Cowdery compiled this list of members and geologists who are known commercial authors.

We're sure the list fails to include everyone – but it's a pretty good start.

**Michael Alger** – former exploration manager for Reichold Energy, now employed as a meteorologist for KTVN-TV in Reno, Nev. He wrote a mystery novel, *Snow Storm*, and is working on *Hailstones*, which draws on his geologic background.

**Sarah Andrews** – One of AAPG's better known authors, a former Amoco geologist in Denver who writes mystery novels based on the fictional character Em Hansen, a forensic geologist. Works include *Earth Colors*, *Killer Dust*, *Fault Line*, *An Eye for Gold*, *Bone Hunter*, *Only Flesh and Bones*, *Mother Nature*,

*Tensleep* and *A Fall in Denver*.

**Rick Bass** – former petroleum geologist who now lives in Yaak, Mont. Fiction works include *The Watch: Stories*, *Platte River*, *In the Loyal Mountains: Stories*, *The Sky, the Stars, the Wilderness: Novellas*, *Where the Sea Used to Be*, *Fiber* and *The Hermit's Story*. Non-fiction works include *The Deer Pasture*, *Wild to the Heart*, *Oil Notes*, *The Lost Grizzlies: A Search for Survivors in the Wilderness of Colorado* and *Colter: The True Story of the Best Dog I Ever Had*.

**Ray Blackhall** – an independent geologist in Houston; his first novel,

*The Sleuth Planet* is soon to be published.

**Karen Rose Cercone** – geology professor at Indiana University of Pennsylvania. Writing under the pen name of L.A. Graf she has scripted several episodes of "Star Trek" and "Deep Space Nine" – for television. As Karen Rose Cercone she has published the mystery novels *Steel Ashes*, *Blood Tracks* and *Coal Bones*.

**James Bruce (J.B.) Coffman** – Ex-Exxon, now an independent in

See **Authors**, page 25

continued from previous page

intense focus, single-mindedness that is a part of their nature, and an essential professional skill.

"Petroleum geologists are essentially detectives," he said. "It's half science and half art, and they are unique individuals."

## A Curious Situation

By all accounts, Penley's talent as a geologist is the stuff that dreams are made of in the oil and natural gas industry. That is why peers were stunned when, at the age of 55, he decided to make a radical career shift and enter the world of publishing.

That move left his colleagues wondering: What makes a man with an obvious connection to the physical nature of things delve into the abstract world of literature?

"The same qualities that make a great geologist are the same qualities that make a great writer," he answered. "Curiosity. The need to delve beneath the surface and discover what's at the heart of things. Unearthing mysteries and piecing together stories from a few scattered clues."

With the encouragement of a close friend, the savvy of a skilled editor and an understanding wife, Penley mastered literary form and quickly navigated the many obstacles associated with publishing a first novel. Two years and three drafts later Gary's first novel, a work based on his own childhood titled *Rivers of Wind: A Western Boyhood Remembered*, won top honors at the 1998 Colorado Book Publisher's Awards.

The literary honor served only to fuel his burgeoning passion, as Penley set out on a new life course. He soon completed a second novel that was based on the life of a friend: A "normal" woman who was mistakenly placed in a mental institution for 20 years.

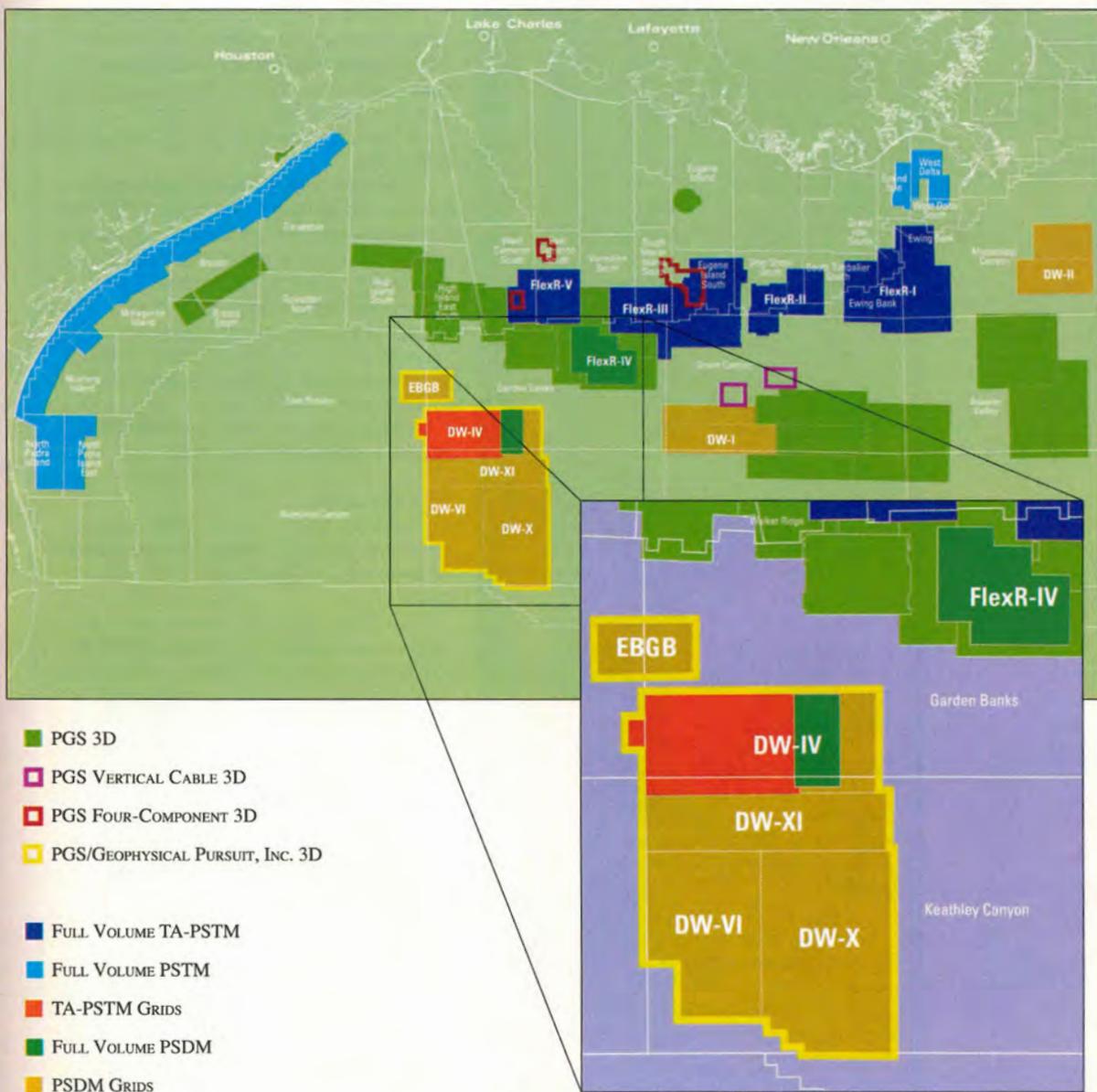
That book, the acclaimed *Della Raye: A Girl, Who Grew Up in Hell and Emerged Whole*, is now under consideration as a possible movie.

In recent months Penley has been on a nationwide promotional tour of his latest work, *Jubal*, a semi-biographical novel exploring the still relevant issue of racism.

However, if you ask the author today what he's most excited about, he would tell you his focus has shifted once again to a new project – a work in progress whose subject matter is very dear to his heart.

"I'm working on a new novel," Penley said. "The main character is an investigator. I wanted him to be intelligent, creative and well traveled. So I made him a retired petroleum geologist." □

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## Business

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financing, private equity or a joint venture, depending on other factors in the deal."

✓ For an independent with a proven track record with a strong company who may have developed some excellent ideas, but who can't get money from the local bank because the new venture has no assets, "private equity is the best option," he said. "These lenders will invest in a management team, although they will own 80 to 90 percent of the new venture and require the independent to put up the rest of the money."

"Too often we see people who have a really good idea but haven't figured out where to go to look for financing," Travis said. "The most asked question we get is 'How much will a bank loan me?' If somebody is asking that question they really don't understand the fundamentals of energy financing."

"Independents need to think outside the traditional bank debt box," he added. "There is not a shortage of money for this industry today – commodity prices are so high that there is an infusion of capital into our business – but you have to know how and where to get it."

### Plan, Plan, Plan

G. Warfield "Skip" Hobbs, with Ammonite Resources, presented a paper on "Preparing a Business Plan for a Petroleum Exploration and Production Venture: A Critical Step in Launching a Successful Enterprise."

Developing a comprehensive business plan, he said, is crucial to accessing capital.

"Business plans help companies think about their goals and challenges and how they can realistically achieve those goals," he said. "A business plan is more than just a spreadsheet – we call it an information memorandum that lays out a business strategy in terms of time and costs."

An effective plan should have at least five sections:

□ An executive summary providing background information on the company's principals.

"What oil and gas people have to realize is that, from an investor's standpoint, the 'who' is more important than the 'what,' because of the miserable track record of oil and gas investing, particularly with small companies," he said.

"Can you demonstrate you have the ability to create shareholder value? Do you have experience in executing the business plan you have laid out? If your experience is Gulf Coast, should you really be exploring the Rockies for tight gas?"

□ What does your company plan to do, what will it cost and what is the expected return?

Investors have a huge stack of submittals on their desk at any given time, Hobbs said, so "include bells and whistles ... that show why the project is better than the others investors also are reviewing."

"The way to do that is by showing the expected return," he added. "Most companies have historically not done the economics."

□ A geologic summary and an economic analysis on a discounted cash flow basis, so the capital providers can compare "apples to apples."

"You can no longer show a back-of-the-envelope economic analysis to a sophisticated investor," Hobbs said. "They want to see a spreadsheet showing a discounted cash flow analysis."

□ Project risks – extremely important, Hobbs said, to avoid any U.S. Securities and Exchange Commission scrutiny.

"By legal definition, because of the abuses in oil and gas and mining over the years, if you misrepresent a prospect and somebody sues you claiming securities fraud, you are subject to an entirely different set of rules and regulations," he said. "And those are stacked against you, so it is imperative to realistically present all the risks of a project."

□ The transaction structure (whether that is overrides, back-ins, carried interests or some other option).

"There is an art to writing these business plans and there is a relatively standard format," he said. "A company greatly enhances its chances of attracting capital if they take the time to put together a comprehensive, well thought-out business plan."

### Both Sides Now

Robert Gershen, president, chief executive officer and chairman of Longview Energy Co., gave his perspective on capital formation from both sides of the fence; he formerly owned Associated Energy Managers, which helped large institutions invest millions in oil and gas ventures, and in 2002 took on the new role managing a failing company.

"Some of these rules (of financing) seem simple, but too many people don't understand or adhere to them," Gershen said.

His rules:

✓ Don't borrow more money than you can repay.

"E&P companies should match the kind of money they get with the kind of risk associated with the projects that money will be used for," he said. "For example, the company I am now running got in trouble because it used bank debt to drill wildcats."

✓ Know your financial partner, and make sure they know you.

"Closing the financing is the beginning, not the end, of the relationship," he said.

✓ Do not lie.

✓ In terms of operations, "keep doing what you do and don't chase the current fad."

"If you are a Rockies player and the current fad is the Gulf of Mexico, don't try to move to the Gulf of Mexico just because that's what the money wants," he said. "If you are an acquisition company don't try to drill wildcats. In short, don't let the money push you around."

✓ Being out of step is probably a good sign.

If what you are doing is what everybody else is doing you are just part of the crowd – and too often the crowd is wrong," he said. "Find your own strength and do it – but know that strength will come in and out of fashion with investors."

Gershen said he has learned some important lessons in his career as both a financier and an oil and gas company executive.

"Two years ago when I was investing I was of the opinion that having money was the most important thing," he said. "I assumed that dollars would attract the best deals and that management was a cost that needed to be limited and controlled. I assumed there is always another deal, and the key to any deal is the original purchase negotiation."

Today? "Managing the relationship with money is an important responsibility. Knowing and understanding whom you are getting in bed with and, in fact, realizing you are getting in bed with somebody is a key to success. □"

**Authors**

from page 23

Houston, had his first novel published two years ago. *The Right Move* is about an ex-oil man who, after losing his family, starts a working dude ranch.

**Robert Euwer** – retired geologist in Granbury, Texas, wrote *No Longer Forgotten*, about his experiences in the Korean War.

**Giovanni Flores** – consultant in Florence, Italy, who co-wrote (with Sue Blakey) *Arc of the Sun: Adventures of a Petroleum Geologist*.

**David Howell** – with the U.S. Geological Survey in Menlo Park, Calif., has written *The Winemaker's Dance*, to be published in September, about the geology of the Napa Valley.

**Franz-Luitpold Hermann Kessler** – a native of Munich, Germany, now in Houston in Shell Oil's Geology and Knowledge Management, has written two novels, *Jamaica Blood* and *Jungle Fever*.

**George Klein** – with SED-STRAT Geoscience in Sugar Land, Texas, has his first novel, *Dissensions*, coming out this month.

**Emily Bradshaw Krokosz** – former Chevron geologist, writes under the pen names of Emily Carmichael and Emily Bradshaw. Carmichael works include *Devil's Darling*, *Autumffire*, *Surrender*, and *Jezebel's Sister*. Bradshaw works include *Cactus Blossom*, *Heart's Journey* and *Halfway to Paradise*.

**John Masters** – legendary oil finder, wrote *The Hunters*, which details the history of Canadian Hunter.

**Gerald Rolf** – author who resides in Ireland; his novel *The Event* deals with terrorism in the Texas, Louisiana and Mississippi oil patch.

**Matthew Silverman** – a consultant in Boulder, Colo. Works include *Civil War Trivia Quiz Book*, *Football Trivia Quiz Book*, *Science Trivia Quiz Book*, *Looney Lawsuits*, *On the Other Hand: Jewish Words of Wisdom* and *My Job is a Joke*.

**Diane Spickert** – an independent in Golden, Colo., author of the children's

book *Earthsteps, A Rock's Journey through Time*.

**Paul Ware** – novelist who is a geophysicist with Unocal, Bellaire, Texas.

**Jerry Wermund** – former long-time associate director of the Bureau of Economic Geology, Austin, who wrote the text and poetry for a book of striking color photography of geologic structures and phenomena, aimed toward young readers.

**James E. Wilson** – consultant in Englewood, Colo., and a Sidney Powers medalist, wrote the award-winning *Terroir: The Role of Geology, Climate and Culture in the Making of French Wine*. □

**RMS Meets Aug. 9-11 in Denver**

This year's Rocky Mountain Section meeting, set Aug. 9-11 in Denver, will offer attendees two meetings for the price of one.

RMS meets jointly this year with the Colorado Oil & Gas Association and its Natural Gas Strategy and Investment Forum. This Rocky Mountain energy summit will feature experts on petroleum science as well as the energy business.

The program will include:

- ✓ Technical sessions.
- ✓ Panel discussions on the Future of Energy and the Role of the Rockies.
- ✓ Exhibits.
- ✓ Short courses and field trips.
- ✓ The AAPG keynote luncheon on

Monday, Aug. 9, featuring Scott W. Tinker, director of the Bureau of Economic Geology and state geologist of Texas, to discuss "Unconventional Gas and Global Energy: Is It Mountain Standard Time?"

✓ Two plenary sessions and a luncheon session on Aug. 10, addressing the place of natural gas in the future of world energy, the overall importance of gas to the nation and the role of the Rockies.

The preregistration deadline is July 9. For more information call the conference hotline at 303-861-2387; e-mail to [RMNG2004@aol.com](mailto:RMNG2004@aol.com); or visit the Web sites at [www.rmag.org](http://www.rmag.org) and [www.coga.org](http://www.coga.org).

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## INTERNATIONAL BULLETIN BOARD

(Editor's note: This column is for international items of note to the AAPG.)

News items, press releases and other information should be submitted to the EXPLORER/International Bulletin Board, P.O. Box 979, Tulsa, Okla. 74101; telephone – 918-560-2616; fax – 918-560-2684; or e-mail – [dfree@aapg.org](mailto:dfree@aapg.org).

This report on the upcoming AAPG international conference in Cancun, Mexico, was prepared by Nahum Schneidermann and Javier Meneses Rocha, the meeting's technical program co-chairs.)

The impressively large response to the call for papers is an indication that the 2004 AAPG International Conference and Exhibition in Cancun, Mexico, is shaping up to be one of the year's most important meetings.

The conference will be held Oct. 24-27 at the Cancun Convention Center.

The final technical program – available now in print and online at [www.aapg.org](http://www.aapg.org) – shows there will be 348 technical presentations: 180 full-day posters (60 each day) and 168 oral presentations (four concurrent sessions).

How high was the level of interest in this meeting? More than 500 abstracts were received.

The technical program is divided into six themes:

Deep Water Exploration, Development and Production – Six sessions dealing with the latest developments from the areas of Gulf of Mexico, Angola, Brazil and other regions.



Photo courtesy of Cancun Conventions and Visitors Bureau

A visit to the ancient Citadel at Tulum, a historic archaeological site that is among the more impressive Mayan ruins to be found near Cancun (just south of the new Xel-Ha National Park, an aquatic sanctuary), is an offered attraction on one of the guest tours during the AAPG International Conference and Exhibition.

Geology and Seismic Interpretation – Six sessions devoted to imaging, interpreting, modeling and understanding subsurface geology from seismic data.

Mexican Basins and Beyond – Three sessions focusing on the host country's basins, prepared by AMGP, the host society, plus looks at the remaining potential of the Americas.

Management and Strategy – Six

special sessions, which include "management forums" featuring industry leaders; independents' perspectives; a student session; and reviews of risk and portfolio management.

Beyond Conventional Petroleum – Three special sessions on impact structures, environmental and gas monetization topics.

Exploration and Production Concepts and Technologies – Nine

sessions, including two provided by the SPE, on production and remote control, drilling practices, IT, carbonates, fractures, heavy oil and mature basins and fields.

Complementing these sessions are six field trips to classic localities of the Mexican geology.

✓ Two of those are dedicated to tectonics and structures of contrasting styles: the compression-salt related structures of the La Popa Basin in the northeast, and the strike-slip fault style of the Sierra de Chiapas.

✓ Two trips offer sedimentology and stratigraphic aspects of eastern and southeastern Mexico.

✓ A field trip to the Sierra de Chiapas will allow outcrop examination of the famous Chixculub impact crater at the K/T boundary, with its carbonate breccias, which produces one million bbls a day offshore the Campeche Sound. This field trip, together with the sessions and short courses on Mexico, provide a priceless opportunity to learn about the petroleum geology of this large producing country.

The trips are complemented by a variety of eco-tours around the Yucatan Peninsula, visiting a variety of archeological sites of the Maya Civilization, unique fresh water dissolution features, tropical flora and fauna and great, pristine beaches of the Caribbean.

Don't delay – start planning now to join us for this fantastic program and geologic experience in Cancun.

## Namibia's Fourth Licensing Round

The Ministry of Mines and Energy is pleased to announce that Namibia's Fourth Petroleum Licensing Round will be held from the 1st September to 30th November 2004. The round will cover selected blocks in the Orange and Walvis Basins.

- > Over 4,300km of seismic data acquired in the Orange and Walvis Basins in 2003 by Veritas DGC is now available.
- > The existing Kudu and Ibhuesi fields in the Orange Basin and the huge Ondjou prospect in the Walvis Basin make this an area of exciting prospectivity.

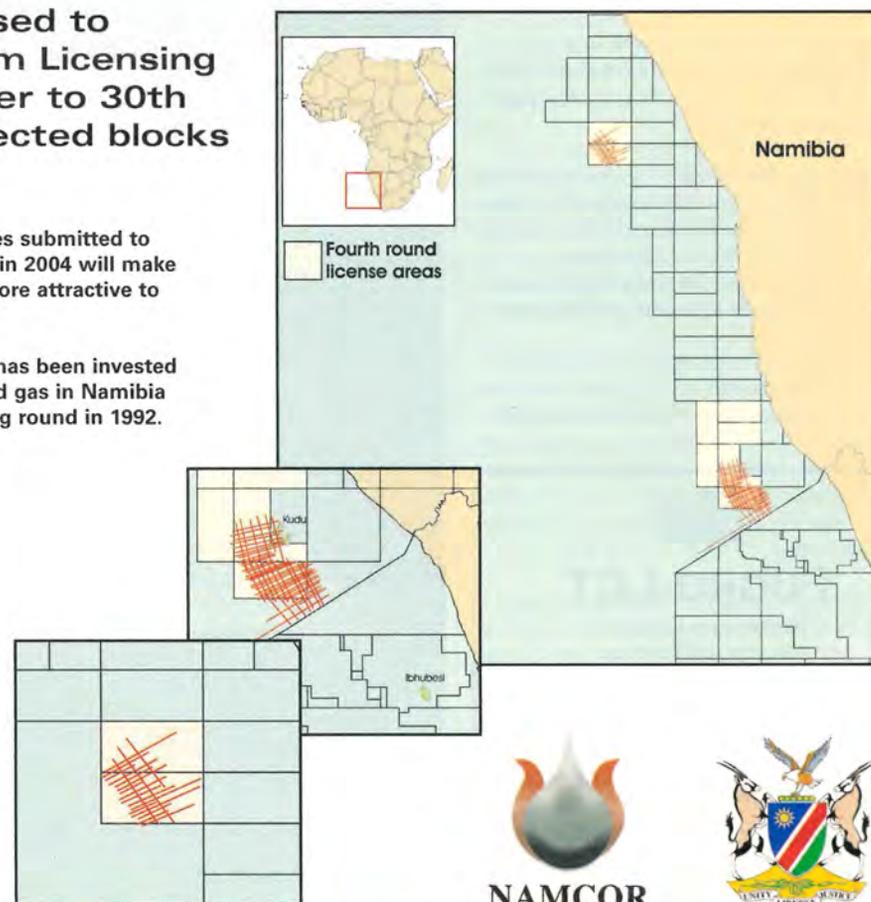
- > Petroleum law changes submitted to Namibia's parliament in 2004 will make marginal prospects more attractive to foreign investors.
- > Over US\$500 million has been invested in exploring for oil and gas in Namibia since the first licensing round in 1992.

Promotion seminars will be held in London (9th September) and Houston (13th September) for the licensing round.

For further information please contact:

**Mr Immanuel Mulunga,**  
Petroleum Commissioner, Ministry of Mines and Energy, +264 61-2848111  
or

**Mr Joe Vatanavi Mazeingo,**  
Managing Director, NAMCOR, +264 61-2045000



*Clarke, Grubbs Elected*

# Delegates Raise Dues Ceiling

The AAPG House of Delegates voted overwhelmingly to raise the ceiling for AAPG dues and handled other agenda matters in the shortest House meeting in recent memory at the Dallas Annual Meeting.

Chairman George Eynon paced the 187 delegates present through an agenda that included three bylaws proposals plus the measure to raise the ceiling for dues for Active and Associate members to \$125 annually. The present Active dues of \$72 per year was nearing the ceiling of \$75.

The ceiling for Emeritus was raised from \$37.50 to \$62.50, and the ceiling for Student members remains at \$10 per year. The dues ceiling was last raised by the House in 1982.

The dues action was approved with no debate and one vote dissenting.

Other bylaws actions included:

✓ Approving the deletion of Junior as a member classification.

✓ Allowing Executive Committee votes to be taken by means other than by mail and face-to-face meetings (fax, teleconference, etc.).

A third proposal, which concerned the method of reinstatement of membership for those expelled for ethical reasons, was returned to committee.

In other activity, delegates elected Donald D. Clarke of Long Beach, Calif., as House chairman-elect for 2004-05, and Ronald L. Grubbs, of Dallas, as secretary-editor.

Valary Schulz, of Dallas, who was voted chairman-elect at last year's meeting, will assume the chairmanship on July 1 and represent the House on the AAPG Executive Committee.

House members honored at the opening session of the AAPG Annual Meeting were:

**House Honorary Membership**

Royce P. Carr, of Mount Pleasant, Texas

**House Distinguished Service**

Stewart Chuber, Schulenberg, Texas  
 John R. Hogg, Calgary, Canada  
 Don W. Lewis, Lafayette, Calif.

Those receiving awards during the

HoD meeting were:

**Long Service Award**

Ronald Broadhead, Socorro, N.M.

**Recognition of Service Award**

George Eynon, Calgary, Canada, HoD chairman

Steven M. Goolsby, Centennial, Colo., HoD secretary/editor

## LOOKINGBACK

### Patience, Persistence

By MARLAN DOWNEY  
Perhaps a review – and awareness – of the past may make us better geologists in the future.

thing as the Good Old Days?

\* \* \*

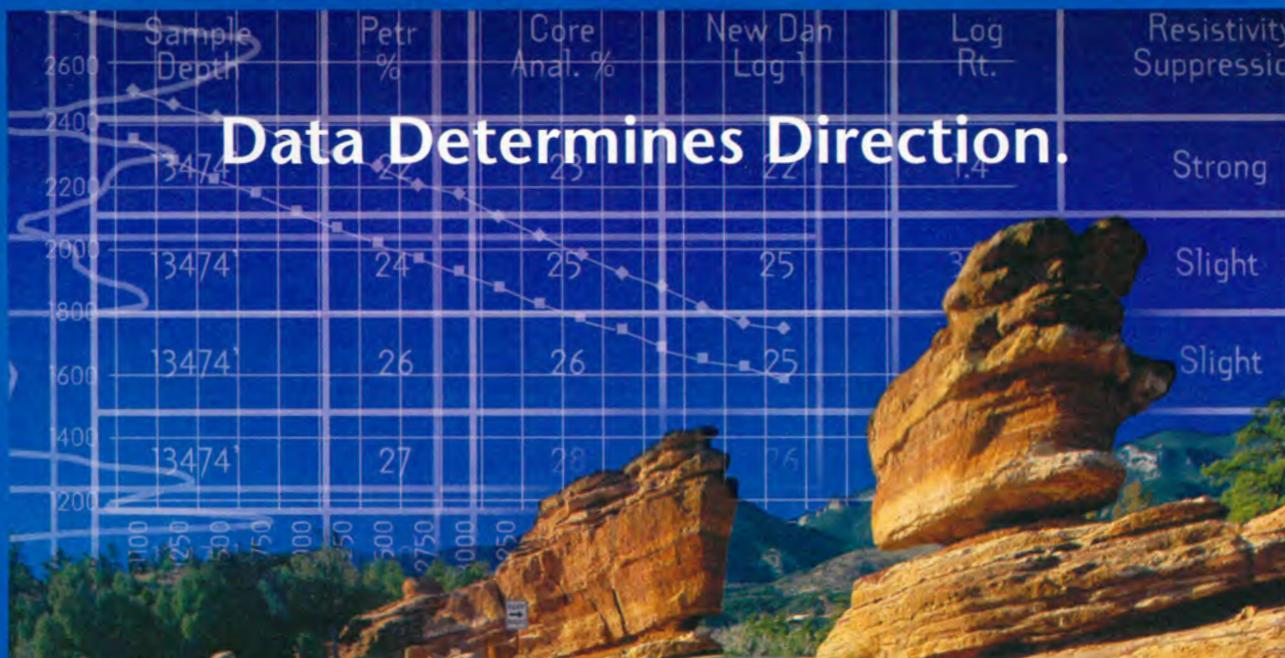
In 1954, the American Petroleum Institute released a national survey concerning public attitudes towards the oil and gas business. It was noted that 72 percent of the survey respondents had a favorable impression of the oil business.

Spindletop Field had already been producing for over 50 years, but 1954 found Michel T. Halbouty announcing a discovery from a new Frio sand on the Spindletop Dome.

And, our lesson from history?

*Patience may be a virtue, but it's persistence that brings home success.*

And you think that there's no such



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## GEOPHYSICAL CORNER

# Why Do We Need To Have Visualization?

(The Geophysical Corner is a regular column in the EXPLORER, edited by Dallas consulting reservoir geophysicist Alistair R. Brown.)

By TRACY J. STARK

How do you convince "a non believer," in a short article with only a few static figures, the need for visualization?

Within some companies the value of integrating visualization techniques into the exploration workflow is well documented (pun intended). In these companies, the answer is along the lines of: "In order to get a well drilled, it is required by those whose money we are using to drill the well, since it has shown repeatedly to be an excellent risk reducer and a very good return on investment."

Visualization encompasses the software, hardware and workflow combination that allows trained and experienced interpreters to rapidly investigate – and communicate to others – the internal heterogeneities of their 3-D data volume.

All three components are important, but the workflow element is probably the most important. It is the workflow that allows you to answer the questions you need to ask of the data. If you choose the wrong workflow, some questions will remain unanswered, or poorly answered.

\* \* \*

The ability to use a particular workflow effectively depends upon the software package employed. For example, package A is better than package B for quickly comparing multiple attributes on a particular section of data. Yet, package B's ability to opacity filter large volumes is significantly better than package A's for identifying regional amplitude anomalies.

The growing amount of available 3-D data is one reason an interpreter needs to employ visualization techniques. On a worldwide basis (excluding North America), numbers published by the IHS Energy Group in "First Break" indicate that from 1991 to 2002 the cumulative surface area covered by 3-D seismic data doubled every 2.5 years. By the end of 2001, the equivalent surface area of this cumulative seismic data was larger than the state of Alaska.

If you assume that a full stack and three additional attribute volumes (such as a near-, mid- and far-stack volume) need to be interpreted, then by the end of 2002 these combined volumes could cover the entire United States. The speed, efficiency, completeness and multiple workflows available from visualization tools are required to keep up with the growing data volumes.

Moore's Law is yet another reason you need to use visualization techniques, and continually upgrade your computers and graphics system. Moore's Law implies that if you upgrade your visualization hardware every three years you will catch up on the growth of the 3-D data volume. Your graphics and computing power will increase by ~4x, while the data volume has only increased by ~2x.

If your competitors are using visualization tools and continually

upgrading their hardware and you are not, how much farther behind are you falling?

\* \* \*

However, the most compelling reason that you need to use visualization tools is that if you don't, you probably will miss important features of your data volume, such as detailed depositional patterns and large regional flat spots.

Figure 1 contains 12 sub-images showing changing depositional patterns. The first sub-image is of the volume-sculpted package. The other 11 images are proportional (stratal) slices through this package. Slices (3) through (11) were taken proportional distances from the top and bottom of the two bounding surfaces (2) and (12).

The depositional patterns in the proportional slices are not apparent on either of the bounding surfaces, nor are they readily apparent in the volume rendered sub-volume.

Such details are important as they indicate possible flow boundaries or conduits as well as give clues where other sands might be deposited.

A volume rendering of the largest amplitudes found in the mid-angle stack over an undeveloped West Africa field is shown in figure 2. This is an end on view of a ~300-square-kilometer survey. The sands of the field, which are expected to contain in the range of 500 bcfg to 1 tcf gas within the limits of the 3-D survey, are between 2,400 to 2,600 ms.

The flat spot at 2,100 ms is hard to miss – however, at least seven different evaluation teams did not identify it as a drilling target. Clearly these teams did not generate a similar display. Most of these teams concentrated their efforts on the slightly deeper (250+ ms) objective known to contain hydrocarbons and believed to be part of a giant regional stratigraphic trap.

How many of us don't have or take the time to explore the volume above or below our current objective? Do you know what you are missing?

\* \* \*

A thick, volume-rendered, opacity-filtered time-slice around 2,100 ms, again just showing the largest amplitudes, is provided in figure 3 (next page). The five wells, drilled for the deeper target, missed hitting the 60-square-kilometer flat spot, even though it covers about 20 percent of the survey. The two wells that clipped the edge of the flat spot should be investigated for oil shows.

The AVO nature of this event is illustrated with figure 4. It is not a "textbook" example of a fluid contact. The "reservoir sands" are hard to discern on the vertical sections, they don't have the textbook behavior on either side of the "fluid contact," and the contact appears to locally "change phase." The "contact" also appears to have some localized "velocity pull down."

However, until the gathers are evaluated for proper processing and rock property modeling has been done,

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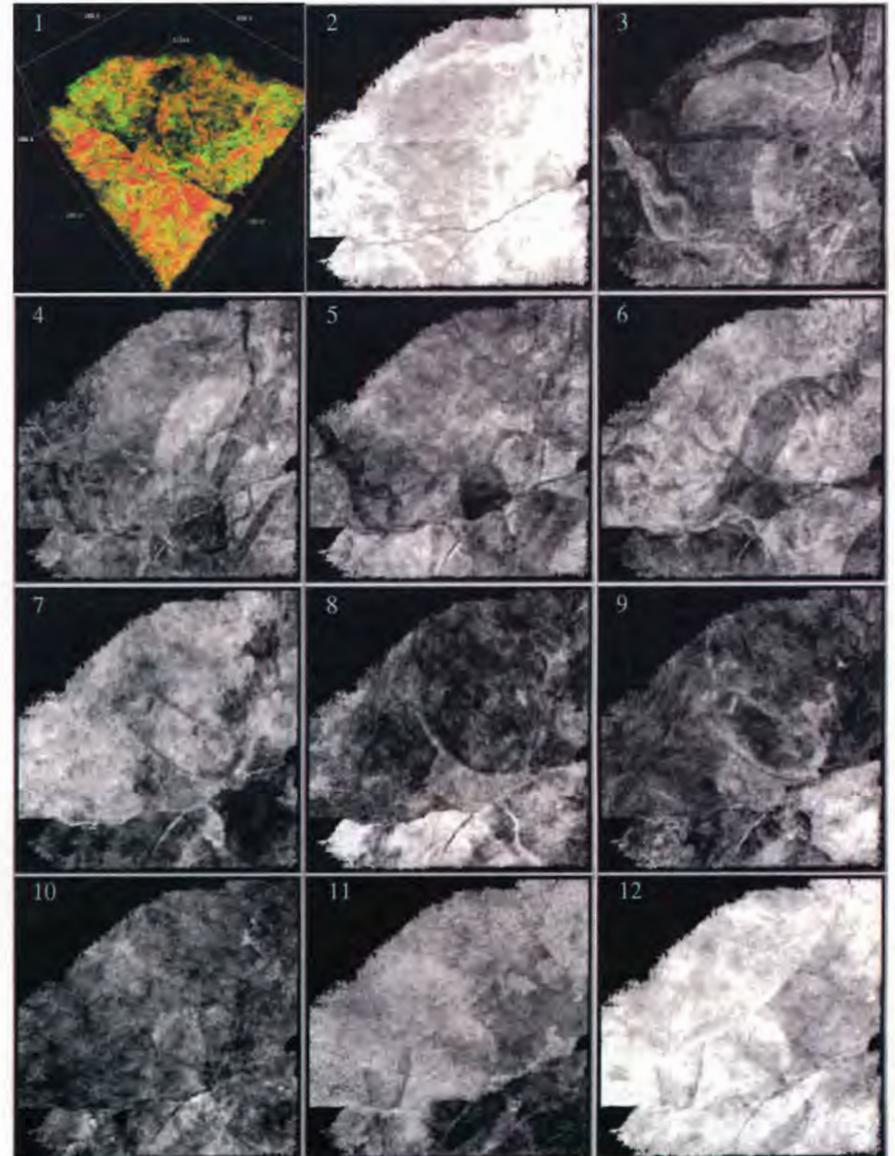


Figure 1 – Proportional slices between two closely spaced horizons show rapid changes in depositional patterns not evident in either the volume sculpted view (1), top horizon (2) or base horizon (12). Seismic data courtesy of Seitel.

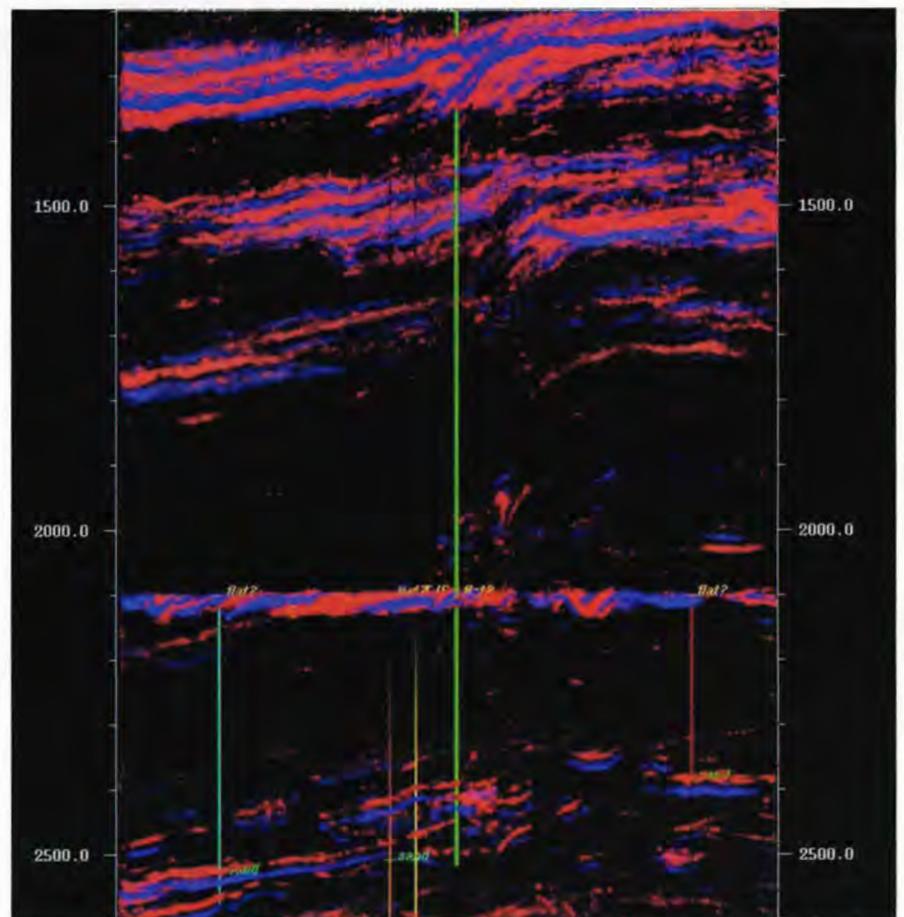


Figure 2 – End on volume rendering of a mid-angle stack volume, just showing the largest amplitudes. These data are from a ~300-square-kilometer survey over an undeveloped West Africa field. The identified hydrocarbon sands are between 2,400 to 2,600 ms. The flat event at 2,100 ms was missed using conventional interpretation techniques.

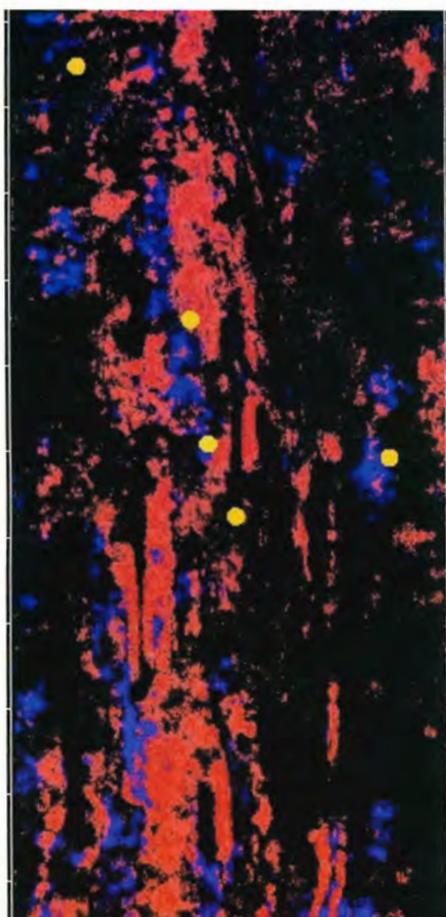


Figure 3 – Top down view of a volume-rendered, opacity-filtered, 20 ms thick slab around 2,100 ms illustrates the lateral continuity and extent of the flat spot shown in figure 2. The five wells (yellow dots) drilled for the deeper target missed the flat spot, even though it covers about 20 percent of the survey, or 60 square kilometers. It appears as if the flat spot should continue off the southern and possible northern ends of the survey.

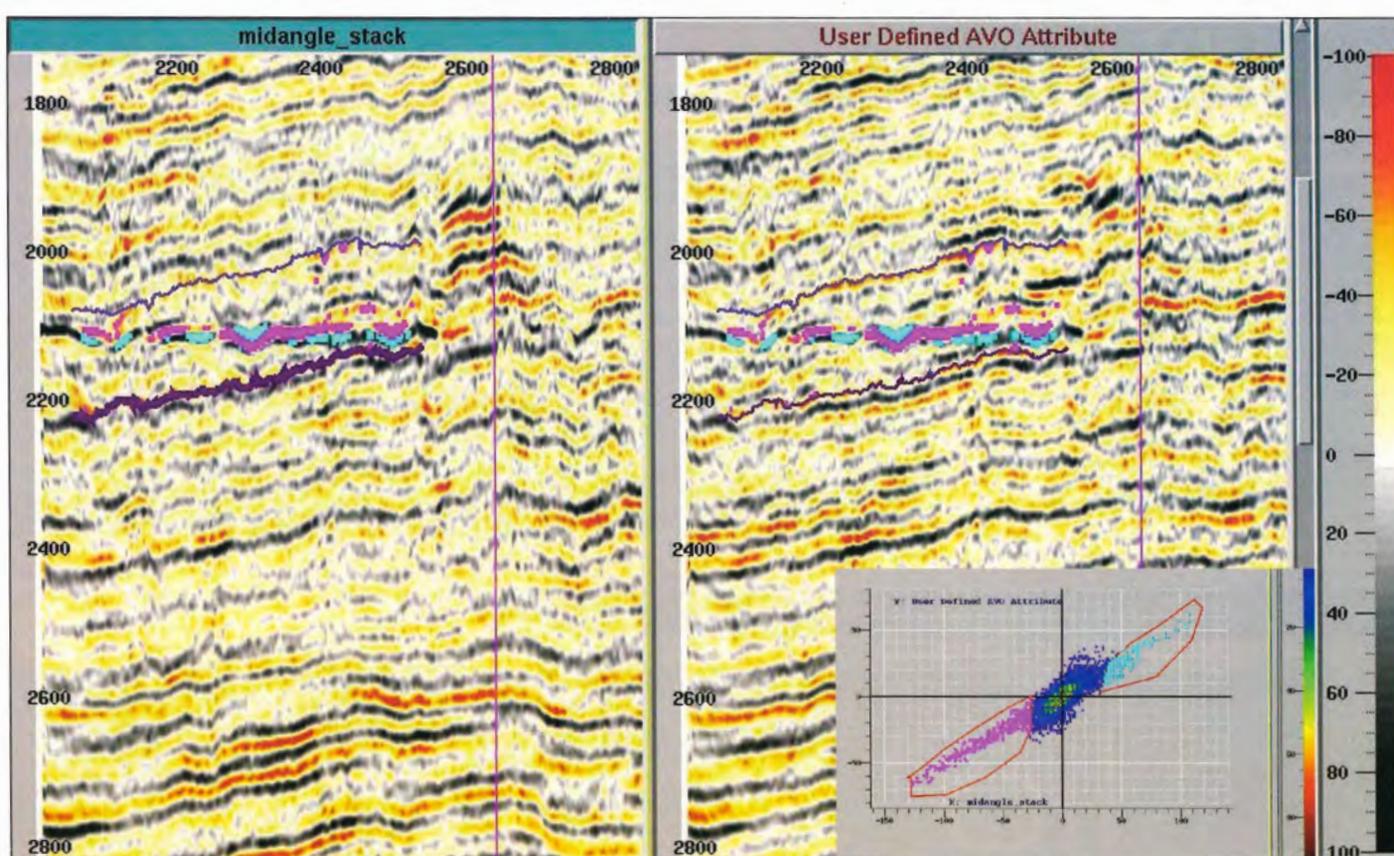


Figure 4 – A single line near the southern end of the survey shows some of the AVO characteristics of the anomaly. The section on the left is from the mid angle stack, while the section on the right is from the full stack. Data between the two interpreted horizons was used to generate the crossplot in the lower right corner. When the anomalous crossplot amplitudes are posted back onto the sections they highlight the flat spot. This figure implies about a 120-meter hydrocarbon column height if the flat spot is a fluid contact.

continued from previous page

a hydrocarbon affect should not be ruled out.

If the flat spot is a fluid contact, then optimistic approximations to the reservoir geometry and properties imply over five billion barrels of oil in place within the limits of the survey. Figure 3

indicates that the flat spot should extend beyond the survey limits.

If the right visualization tools and workflow were utilized earlier in the project, slight modifications to two of the drilled well paths could have allowed testing of this potential reservoir.

So is this a missed billion-barrel

field? Only a well will tell.

For those of you who still don't think you need visualization, you might be right, for in the words of Edward Deming:

*"It is not necessary to change. Survival is not mandatory."*

(Editor's note: Stark is with STARK Research, Plano, Texas.)

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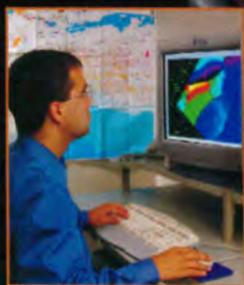
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To these people, and to those who have generously made donations in the past, we sincerely thank you.

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**SPOTLIGHT ON EDUCATION**

# Manpower Concern Noted by E-Survey

By J.B. (Jack) THOMAS  
AAPG Geoscience Director

An electronic survey by the Education Committee, taken to assess the strengths and weaknesses of AAPG courses, seminars and conferences, shows concern among members regarding the decline in trained, experienced geologists to replace those retiring from our business in the next 10-15 years.

We are utilizing the respondents' key points to help guide the future of AAPG training services.

Survey highlights included:

✓ Training opportunities that are one to three days long and presented at a convenient location (in-house, in town, in the field, etc.) are preferred over the one- to two-week courses.

✓ AAPG training is the best available – but members take classes from many sources.

✓ Courses are taken to enhance work performance rather than as a "perk" for good performance.

✓ Courses that are two to three days long and offered in conjunction with meetings are most popular.

✓ On average, members took two courses/workshops in the past 24 months.

✓ Reservoir modeling-structure to simulation is the most advanced course wanted.

✓ Next to in-house training, AAPG provided most member training in the last two years (but only one in five took an AAPG course).

✓ Field trips or lectures are better than online learning but online learning is great because it is self-paced.

✓ AAPG courses offered "in-house" or at local meetings are good alternatives to those held with national, section or international meetings.

What's the influence of the survey results?

✓ Training Partner programs of selected courses are available to companies for in-house, in our headquarters or elsewhere.

✓ The second Winter Education Conference will be held in Houston in February, featuring up to 11 courses and seminars in a one-week, "you pick what you want," format.

✓ Some new field seminars will include combined classroom and field experiences.

✓ Selected engineering and geophysical seminars are being added to our curriculum.

You responded; we listened and are acting. Thank you for helping us all adapt to the changing needs in our professional society. □

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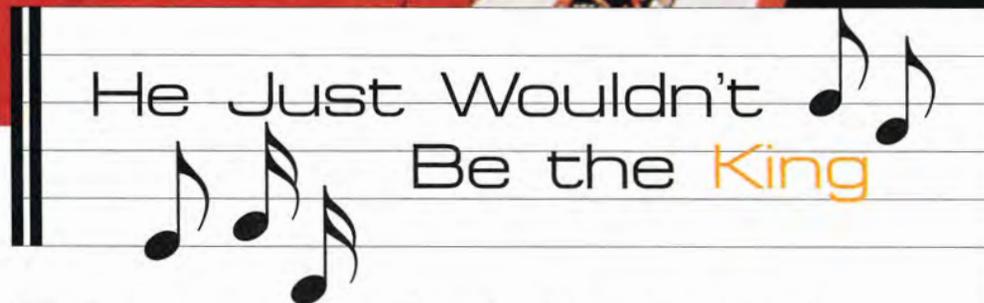
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The following candidates have submitted applications for membership in the Association and, below, certification by the Division of Professional Affairs. This does not constitute election, but places the names before the membership at large. Any information bearing on the qualifications of these candidates should be sent promptly to the Executive Committee, P.O. Box 979, Tulsa, Okla. 74101. (Names of sponsors are placed in parentheses. Reinstatements indicated do not require sponsors.)

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Ormerod, David Scott, Fusion Oil, West Perth (R.J. Jason, R.A. Hill, P.G. Carroll); Somerville, Robert Malcolm, consultant, South Perth (reinstatement)

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Rehill, Trent, ChevronTexaco Overseas Petroleum, Bellaire (W.G. Higgs, M. Krolow, B. Robertson)

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**Texas**

Borger, Robert Lee, consultant, Corinth (D.L. Sims, W. T. Allen, D.A. Walker)

www.update

# Divisions Enhance Web Presence

By JANET BRISTER  
Web Site Editor

The divisions of AAPG continue to upgrade their individual Web sites.

The most noticeable update involves the sites for the Division of Environmental Geosciences and the Energy Minerals Division, both of which recently looked to AAPG to host, design and implement their Web offerings.

DEG has now added a calendar, features an employment help area and – perhaps its most significant addition – DEGnet, the electronic version of its science journal "Environmental Geosciences."

In fact, DEGnet now includes all issues of "Environmental Geosciences." DEG will continue to print the journal, although student members will receive the publication only through DEGnet.

Subscribers to EG may opt for print-only or Web-only versions of the publication, or both.

EMD has introduced a "members only" area that includes reports, past newsletters and a member directory featuring the commodities in which they specialize or have an interest.

The Division of Professional Affairs' site features a directory of certified members who are available for consulting and contractual work. It is available to the public for use in finding a certified professional in their area to serve as an expert witness, provide technical advice, research and other geoscience related services.

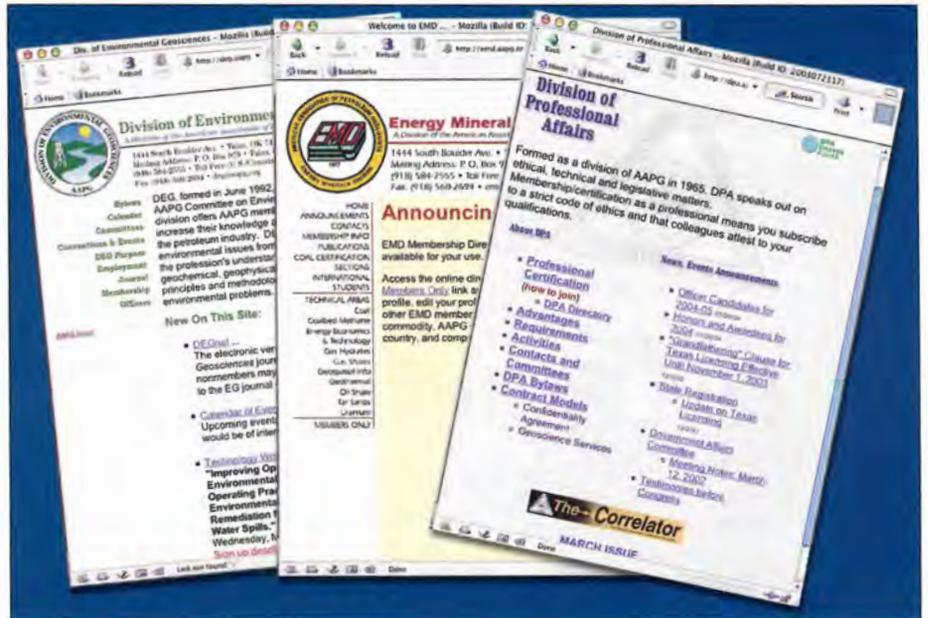
Other features of DPA's site include the division newsletter, testimonies given before government committees and

offices, and the latest developments with licensing issues for the geoscience professionals worldwide.

All three of these sites are searchable by the Google search tool provided on the AAPG home page.

Volunteers continue to provide the content for the divisions' sites.

Good browsing! ☐



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- EOG Resources Inc. – General Fund; International Pavilion
- Hunt Oil Co. – Career Seminars; Field Trip Guidebooks; International Pavilion
- Noble Energy – International Pavilion

### Silver (\$3,500-\$5,999)

- AAPG Foundation – Teacher Program
- Burlington Resources – International Pavilion; Message Center
- Tom Brown Inc. – General Fund
- Cabot Oil & Gas Corp. – General Fund
- Chesapeake Energy Corp. – General Fund
- EnCana Corp. – General Fund
- Hunt Petroleum Corp. – DPA Luncheon; General Fund; Guest Program
- Landmark Graphics – Dallas Arboretum
- MB Exploration – Poster Sessions
- Occidental Oil and Gas Corp. – International Pavilion
- Precision Drilling – Golf Tournament
- Samson – Mini-Breaker Reception

### Bronze (\$1,000-\$3,499)

- Anschutz Overseas – International Pavilion
- Ascent Energy Inc. – General Fund
- Aspect Energy LLC – General Fund
- Bass Enterprises Production Co. – General Fund

- Brazos Gas Co. – Dallas Arboretum
- Brigham Exploration – Dallas Arboretum
- Camden Resources Inc. – General Fund
- Chief Oil & Gas LLC – General Fund
- Comstock Resources Inc. – General Fund
- Core Laboratories – International Pavilion
- DeGolyer and MacNaughton – Dallas Arboretum
- Five States Energy Co. LLC – DPA Luncheon
- H&S Production Inc. – Dallas Arboretum
- Halliburton – Dallas Arboretum
- Headington Oil Co. – General Fund
- The Houston Exploration Co. – International Pavilion
- Hutchison Oil & Gas Corp. – General Fund
- Jaguar Exploration Inc. – International Pavilion
- Marathon Oil Co. – General Fund
- McMoran Oil & Gas – Technical Program
- Newfield Exploration Co. – International Pavilion
- Optimistic Oil Co. – EMD Luncheon
- Petro-Hunt LLC – General Fund
- Petroleum Technology Transfer Council—Texas Region – General Fund
- Range Resources Corp. – General Fund
- Reef Exploration Inc. – Sponsor Hats
- Republic Energy Inc. – General Fund
- The Rudman Partnership – Dallas Arboretum
- Spindletop Oil & Gas Co. – Dallas Arboretum
- Swift Energy Co. – International Pavilion
- Ventex Oil & Gas, Inc. – SEPM General Fund

### Patron (\$150-\$999)

- Amerada Hess Corp. – General Fund
- Americrest Bank – General Fund
- BMW Resources Inc. – Dallas Arboretum; General Fund
- Bright & Company – Dallas Arboretum
- William M. Cobb & Associates Inc. – General Fund
- Eby Petrography & Consulting Inc. – General Fund; SEPM Technical Program and Student Support; Student Participation in Field Trips
- Emerald Energy LLC – General Fund
- Energy and Geoscience Institute – General Fund
- Energy Drilling Co. – General Fund
- Energy Production Corp. – General Fund
- Geological Consulting Services – General Fund
- GeoMap Co. – General Fund
- Glacier Exploration – Dallas Arboretum
- Hardin International Processing Inc. – Dallas Arboretum
- HEMCO – General Fund
- Holly Petroleum Inc. – General Fund
- John S. Herold Inc. – DPA Luncheon
- Robert M. Hough – General Fund
- The IPR Group of Companies (IPR) – General Fund
- Tom Mairs Geologist, PC – General Fund
- National Mining Association – EMD Luncheon
- Petroleum Systems International Inc. – General Fund
- Pitts Energy Group – DPA Luncheon
- Quantum Energy Partners – DPA Luncheon
- Seismic Exchange Inc. – Dallas Arboretum
- Shoreline Gas – General Fund
- Sinagua Resources – General Fund
- Technical Drilling Services – General Fund
- Treador Resources Corp. – General Fund
- TSC Oil & Gas – General Fund
- Wilco Properties Inc. – General Fund

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continued from previous page

#### Japan

Fujiwara, Yafue, Kyusyu HQ DIA Consulting, Fukuoka (K. Nakayama, N. Ogura, T. Okazaki); Takayama, Kuniaki, Inpex Corp., Tokyo (T. Akutsu, K. Miyake, O. Akihiko)

#### Malaysia

Nordin, Abu Samad, Petronas Carigali Sdn Bhd, Kuala Lumpur (reinstate)

#### Nigeria

Taiwo, Ayodeyi Oluwole, Degeconek, Lagos (A.O. Adesanya, O.S. Oladebo, A.O. Ogunjobi)

#### Pakistan

Khan, Gulzeb Nabi, ENI Pakistan, Karachi (M.R. Khan, M. Abdali, T.S. Hasany); Ul-Hasan, Syed Dabeer, ENI Pakistan, Karachi (M.R. Khan, J.D. Smewing, M.I. Treesh)

#### People's Republic of China

Jia, Cheng Zao, PetroChina, Beijing (D. Li, G.M. Zhai, X.G. Tong); Zong, Guohong, Institute of Geosciences, Dongying, (S. Li, C. Lin, K. Wei)

#### Saudi Arabia

Al Tayyar, Haytham A., Saudi Aramco, Dhahran (reinstate)

#### Turkey

Yildirim, Huseyin, Aladdin Middle East, Ankara (S. Aytuna, A. Tandircioglu, M.N. Yalcin)

## READERS' FORUM

**Larry Funkhouser**

Regarding Larry Funkhouser receiving the Sidney Powers Memorial Award: Larry was more than "a geologist's geologist." He was the charismatic leader who took a direct interest in your career development and personal life.

I was a regional geologist with Caltex Pacific Indonesia in Sumatra when I decided to join one of the two parent companies, Chevron or Texaco – at that time two separate organizations. Both offered me a job.

Texaco's letter started with "Dear Mr. Zappaterra," and went on outlining an offer.

Chevron's letter started with "Dear Enzo," and was signed: "Larry." That personal touch was the key factor for my decision to join Chevron in 1972.

Thank you, Larry, for your warmth and the impact you had on the rest of my career with Chevron.

There is no other person more deserving of AAPG's highest honor.  
Enzo Zappaterra  
London, England

**The Building Block**

Regarding author Peter Scholle and AAPG Memoir 77, "A Color Guide to the Petrography of Carbonate Rocks" (May EXPLORER):

Amen! This is the fundamental building block in our understanding of a reservoir. If we don't understand this, what do we understand?

To pick a shale-sand example: We have lots of shaly-sand log analysis equations. All are probably right for a unique rock(s). A detailed knowledge of what the rock really looks like should be

*Editor's note: 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.*

a key factor in determining what, if any, SS equation to use.

William Moore  
Hereford, Ariz.

**What About the Little Guy?**

Your article "Reserve Estimates Under Scrutiny" (May EXPLORER) is a very timely one.

Whether the downward revisions by majors like Shell, or by large independents like El Paso, is a systemic problem or not is yet to be judged. However, one critical matter has not been addressed in this article - i.e., what is the

impact on small producers?

Domestic small independents have been hit thrice consecutively:

- ✓ Capital flight post-9/11.
- ✓ The Enron, Dynegy fiasco – leading to the almost cessation of capital availability.
- ✓ And now "reserve estimation" uncertainty, making bank doors locked.

AAPG should consider this issue of impact on small producers – a greater subject for debate rather than thinking about Shell, El Paso or Nexen. Those companies can spend for "re-certification" of reserves by large well-

known reservoir-consulting groups like Ryder Scott, etc.

What about small producers? Can they afford to do the same to gain "trust" of bankers?

S.K. Bhattacharjee (Kumar)  
Houston

**Career Choices**

I read about the salaries for beginning geologists and at all levels of experience (April EXPLORER). One thing it tells me is that petroleum geology is not a career of choice.

I do not know the salaries of other sciences, but I do the salaries of the employees of the City of San Diego (it's public information). Not only can these people retire in 20 years, but they get a COLA – (and) if the they work for 30 years they get full salary. The department heads, fire and police captains all make over \$150,000 plus generous medical benefits into retirement.

You can get paid more as a full geology professor with a lot less work than a working geologist – and they have a secure job and can't be laid off, a common occurrence in the oil industry.

This certainly wasn't the case 40 years ago; but today I would advise a grandson to go into public service, a far more rewarding career. One of my granddaughters, admittedly Phi Beta Kappa, graduated with a BA and gets \$60,000 per year and is permitted to go after her masters at no cost while working.

Is Eisner worth \$320 million a year and a geologist with over 20 years only worth \$100,000?

George Pichel  
Oceanside, Calif.

## Foundation Grant Recipients Named

The AAPG Foundation has announced that 75 people have been chosen to receive funding for graduate studies through the Foundation's Grants-In-Aid program.

The recipients, who were selected from among 280 applications, will be receiving a total of \$130,200 in grants.

Recipients were announced at the AAPG Annual Meeting in Dallas and are listed on the Foundation Web site at [http://foundation.aapg.org/gia/current\\_recipients.cfm](http://foundation.aapg.org/gia/current_recipients.cfm).

Abstracts from recipients will be published on AAPG's *Search & Discovery* Web site this fall.

For further information or to make a

donation to the Grants-in-Aid Program, go online, or contact Rebecca Griffin, grant coordinator, at 918-560-2644.

In other Foundation news, the Members of the Corporation have elected two new members – one to replace a member who was elected to Trustee status and the other to replace Harrison Jamison, who has stepped down.

The new members are Lou Bortz, of Denver, and Byron Dyer, of Houston.

Also, William Crain, of Danville, Calif., was elected to the trustees to replace Paul Dudley, who is stepping down from the position. □

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**IN MEMORY**

Allan P. Bennison, longtime Tulsa geologist and AAPG honorary member, died May 5 at his retirement home in Grass Valley, Calif. He was 86.

A founding Trustee Associate, a Distinguished Lecturer and a generous donor to the AAPG Foundation, the Allan P. Bennison Distinguished Lecture Fund is in his honor.

Bennison graduated from the University of California-Berkeley, and began mapping for the U.S. Geological Survey in World War II and later began carving his reputation as a stratigrapher and paleontologist working with Tri-Pet (Sinclair, Cities Service and Richfield) in Colombia. He later joined Sinclair as chief stratigrapher and traveled the world.

One of his many projects included the compiling of the AAPG Highway Map Series. He received AAPG honorary membership in 1999 and the Distinguished Service Award in 1986.

Bennison became an independent geologist in 1968 and continued to make oil finds in Oklahoma. He retired to California in 1999.

Allen, Charles Edward, 76  
Fort Worth, April 10, 2004

Allen, Roy Ward Jr., 76  
El Paso, Texas, Aug. 29, 2003

Beck, Bryan D. Jr. (EM '45)  
Beaumont, Texas

Bennison, Allan P., 86  
Grass Valley, Calif., May 5, 2004

Crosbie, James Morton, 86  
Harahan, La., March 29, 2004

Galpin, Sidney Stewart (EM '42)  
Clarksburg, W.Va.

Gilchrist, William H., 72  
Houston, December 2003

Hawes, Lawrence Homer Jr.  
(EM '65) Midland, Texas

Hennington, Willard Mack, 76  
Houston, April 1, 2004

Lamont, Donald Breck (AS '74)  
Northport, N.Y.

Lochte, Erwin Richard Jr. (EM '59)  
San Antonio

McDaniel, Paul N., 80  
Tulsa, April 19, 2004

Melhorn, Wilton Newton (EM '49)  
Thorntown, Ind.

Moran, William Rodes (LF '44)  
La Canada, Calif.

Polson, Allyn Smith Jr., 42  
Manhattan, Kan., Dec. 12, 2003

Schneider, Stephen Ward, 78  
Dallas, July 6, 2003

Snyder, Don Otis (AC '61)  
Odessa, Texas

Weatherston, Douglas (EM '30)  
San Antonio, Nov. 17, 2003

White, James Robert, 78  
The Woodlands, Texas  
Dec. 15, 2003

*(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 member's date of death is unavailable, the person's membership classification and anniversary date are listed.)*

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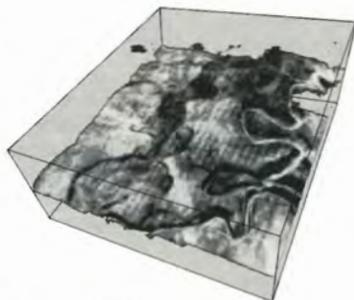
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- \* Craig Shipp (Shell)
- \* Dr. Frank G. Ethridge (Colorado State University)



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- Joe Cartwright (Cardiff University, UK)
- Lesli Wood (University of Texas, USA)
- Vickey Sare (ChevronTexaco, USA)



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## PROFESSIONAL NEWS BRIEFS

**Jason Beall**, to senior geophysicist, Apache North Sea, Aberdeen, Scotland. Previously geophysicist, ConocoPhillips UK, Aberdeen.

**James D. Beavers**, to senior geophysicist-Anadarko district, Chesapeake Energy, Oklahoma City. Previously project geophysicist, EOG Resources, Oklahoma City.

**Thomas A. Berkman**, to geological specialist-deepwater development, Kerr McGee, Houston. Previously principal geologist-deepwater production, BP, Houston.

**Thomas P. Buerkert**, to senior geophysicist, BHP Billiton Petroleum, Houston. Previously exploration geophysicist, ExxonMobil Exploration, Houston.

**Joe Campbell**, to geological manager-southern Oklahoma district, Chesapeake Energy, Oklahoma City. Previously geological supervisor, ONEOK Resources, Tulsa.

**David L. Carr**, to senior geologist, Matador Resources, Dallas. Previously consulting geoscientist, Austin, Texas.

**Chris Chaffin**, to staff geologist, Hilcorp Energy, Houston. Previously senior geologist, El Paso Production Co., Houston.

**Anthony D'Agostino**, to geologic adviser, Omni Laboratories, Houston. Previously geologic consultant, TD Geoscience, Katy, Texas.

**Kenneth O. Daniel**, to geologist/partner, San Saba Resources, Arlington, Texas. Previously senior geologist, Encore Acquisition Co., Fort Worth.

**Bryan DeVault**, to chief geophysicist, Vecta Technology, The Woodlands, Texas. Previously senior exploration geophysicist, Anadarko Petroleum, The Woodlands.

**Al Filipov**, to marketing representative-data licensing, Fairfield Industries, Sugar Land, Texas. Previously marketing manager, Tricon Geophysics, Houston.

**Mark A. Fortuna**, to project geophysicist, EOG Resources, Oklahoma City. Previously geophysical adviser, Conoco, Houston.

**David A. Godsey**, to senior geologist-Permian district, Chesapeake Energy, Oklahoma City. Previously project geologist, EOG Resources, Midland, Texas.

**Robbie R. Gries** was among those honored in Houston recently during the Rader Energy 2004 Key Women in Energy-Americas ceremony, recognizing those who have made "significant recent contributions" to the industry or energy sector as a

whole. Gries, a past AAPG president, is with Priority Oil & Gas, Denver.

**Ben D. Hare**, to vice president and chief operating officer, Panhandle Royalty Co., Oklahoma City. Previously vice president, Legends Exploration, Houston.

**William H. Hobbs**, to geological adviser, deepwater Gulf of Mexico, Devon Energy, Houston. Previously staff geologist, ConocoPhillips, Houston.

**Brent Huntsman**, to senior geologist-Gulf Coast district, Chesapeake Energy, Oklahoma City. Previously geologist, Nadel &

Gussman, Tulsa.

**Andrew Jarrett**, to associate geologist-Gulf Coast district, Chesapeake Energy, Oklahoma City. He is a recent geosciences graduate of Princeton University.

**Peter S. Joslin**, to senior staff economist, BHP Billiton, Houston. Previously manager-petroleum services, Deloitte Touche, Houston.

**John Kapchinske**, to geological manager-Anadarko district, Chesapeake Energy, Oklahoma City. Previously exploration manager-Mid-Continent district, HS Resources, Oklahoma City.

**Warren Leslie**, to managing director, Enterprise Energy, Adelaide, South Australia. Previously director, Traditional Oil Exploration, Adelaide, South Australia.

**Jack K. Lowry**, to senior geologist-Permian district, Chesapeake Energy, Oklahoma City. Previously Permian Basin geologist, Chaparral Energy, Oklahoma City.

**Harry L. Max Jr.** has been elected to the board of directors for Horizon Offshore, Houston. Max currently

continued on next page

# bpTT Vacancies

bp Trinidad and Tobago invites applications from experienced professionals who are nationals of Trinidad and Tobago to fill the following positions.

### GEOLOGIST

The successful candidate will have at least 10 years' interpretation experience and a proven track record of working in multi-disciplinary teams. He/she is also expected to have excellent communication and interpersonal skills, including: strong influencing skills, proven team-building abilities, commitment and determination to achieve team success. An ability to learn new software skills and be innovative in the way these are applied will form an important aspect of this job.

A minimum of a BSc. in Geology or a related discipline is a requirement for this position.

### PETROPHYSICIST

The successful candidate will have a thorough understanding of all well data types. He/she will be responsible for defining rock quality controls, fluid types, and input parameter for determining volumetrics. Knowledge of all aspects of well data technology and acquisition for logs, pressures, samples, cores and drilling data is required. The incumbent will have strong well data analysis and interpretation skills, including data quality control, data processing and interpretation, log analysis, conventional and special core analysis, and experience with image logs and NMR. Also required is the ability to interpret limited data sets, integrate diverse data types and to formulate and implement innovative interpretation approaches. Experience with subsurface interpretation software skills (Landmark suite and Geolog) is a requirement.

Skills sets in Seismic Rock Properties and Pore Pressure Production are critical to the success of bpTT's exploration programme.

Interested persons with a minimum of a BSc. in a related discipline may apply. A minimum of 5-10 years' experience would be ideal; however, candidates with less experience may be considered.

### GEOPHYSICIST

The Geophysicist will assume the lead role for the following:

- conducting seismic interpretation and attributing mapping in potential new field areas utilizing Landmark and Geoprobe software
- working with geologist to construct 3D Earthvision models to accurately describe the structure and properties for exploration discoveries being considered for development
- determining bulk rock volume ranges and integrating petrophysical data to calculate reserve ranges for individual reservoirs and fault segments
- working with the team to develop risk matrices and risk mitigation plans for potential new fields
- participating in management reviews and appraisals and providing relevant documentation and data
- working closely with exploration team on drilling prospects, including attending meetings and providing input into SORs (Statement of Requirements) for new wells
- performing G&G post-appraisals of drilled prospects for inclusion in the portfolio of development opportunities being evaluated by the team
- setting personal safety standards and demonstrating Health, Safety and Environment leadership within the team.

The successful candidate will be required to have the following skills, education and work experience:

- 1+ years' experience in seismic interpretation/ modeling
- Strong written and verbal communication and teamwork skills
- Strong planning and organizational skills
- BSc. degree in Geophysics, Geology, or related discipline.

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## MEETINGS OF NOTE

*Editor's note: An asterisk denotes a new or changed listing.*

### 2004 U.S. Meetings

Aug. 9-12, Rocky Mountain Section, AAPG, annual Section meeting, Denver.

\* Aug. 24-28, SEPM research conference, Grand Junction, Colo.

Sept. 14-16, APPEX (AAPG Prospect and Property Exposition), AAPG, Houston.

Sept. 22-26, AAPG Foundation Trustees Associates, annual meeting, Carmel, Calif.

Sept. 26-29, Society of Petroleum Engineers, annual meeting, Houston.

Oct. 3-6, Eastern Section, AAPG, annual Section meeting, Columbus, Ohio.

Oct. 10-12, Gulf Coast Association of Petroleum Societies, AAPG, annual Section meeting, San Antonio.

Oct. 10-15, Society of Exploration Geophysicists, annual meeting, Denver.

Nov. 7-10, Geological Society of America, annual meeting, Denver.

### 2004 International Meetings

June 6-9, Society of Professional Well Log Analysts, annual meeting, Noordwijk, Netherlands.

June 7-10, European Association of Geoscientists and Engineers, annual meeting, Paris, France.

\* Oct. 10-13, AAPG Europe Region Conference, Prague, Czech Republic.

Oct. 24-27, AAPG International

Conference and Exhibition, Cancun, Mexico.

\* Nov. 23-25, PETEX, London, England.

Dec. 7-10, Offshore Southeast Asia, annual meeting, Suntec City, Singapore.

### 2005 U.S. Meetings

June 19-22, AAPG annual meeting, Calgary, Canada.

# bpTT Vacancies

continued from previous page

owns and operates Big Wells Energy Corp. and HMX Investments, Houston.

**Maureen McCollum**, to associate geologist-Gulf Coast district, Chesapeake Energy, Oklahoma City. Previously management project analyst, Arkansas Oil & Gas Commission, Fort Smith, Ark.

**Fausto Mosca**, to basin modeler and petroleum systems expert, Petroleum Systems International, Salt Lake City. Previously technical services team leader, Shell Italia E&P, Rome, Italy.

**Lew Murray**, to consulting geologist, Traverse City, Mich. Previously vice president-exploration, Miller Exploration, Traverse City, Mich.

**Chet Paris**, to vice president-new ventures, Armstrong Oil & Gas, Denver. Previously senior geologist, BP Exploration Alaska, Anchorage, Alaska.

**Mark Przywara**, to senior geologist, Rising Star Energy, Dallas. Previously senior geologist, DDD Energy, Houston.

**Mark Singleton**, to senior geophysicist-Gulf Coast district, Chesapeake Energy, Oklahoma City. Previously senior geophysicist, Brigham Exploration, Austin, Texas.

**Wendy Straatmann**, to senior geologist, Samson Canada, Calgary, Canada. Previously senior geologist, Samson Resources, Tulsa.

**W.J. Evert Van de Graaff**, to chief geologist, PanTerra Geoconsultants, Leiderdorp, Netherlands. Previously retired as advisor-production and reservoir geology, Shell International E&P, The Hague, Netherlands.

**Al Warner**, to senior geologist, Chesapeake Energy, Oklahoma City. Previously geologist, HS Resources, Oklahoma City.

*(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, smooore@aapg.org; or submit directly from the AAPG Web site, www.aapg.org/explorer/pnb\_forms.cfm.)*

### SEISMIC ACQUISITION SPECIALIST

The primary responsibility is on-time and safe delivery of marine seismic acquisitions to the subsurface teams in bpTT. The successful candidate will design and implement new 3D, 4D and 4C seismic projects. He/she will assist in the implementation of strategy for future acquisition, processing and reprocessing of seismic data. The successful candidate must demonstrate a passion for HSE.

It is expected that all applicants will have a minimum academic qualification of a BSc. degree or equivalent combination of experience in the applicable discipline. Candidates must demonstrate a proven track record of on-time delivery of projects over a period of at least 5 years.

### SEISMIC PROCESSING SPECIALIST

The primary responsibility is on-time and safe delivery of processed seismic data (3D, 4D & 4C) to the subsurface teams in bpTT. The individual will provide quality control and assurance for delivery of seismic data volumes from the contractor to bpTT. He/she will also advise on well-bore planning (VSP imaging and seismic while drilling). The successful candidate will assist in developing a strategy for future acquisition, processing and reprocessing of seismic data.

It is expected that all applicants will have a minimum academic qualification of a BSc. degree or equivalent combination of experience in the applicable discipline. Candidates must demonstrate a proven track record of on-time delivery of projects over a period of at least 5 years.

### PETROLEUM ENGINEER

The successful candidate will be a key member of a multi-disciplined subsurface team. The primary role of the petroleum engineer will be in delivering daily production, quality well work, implementing reservoir management strategies, designing completions, and managing costs associated with wells, manage and deliver information for prospect evaluation and development, production optimization, and reservoir management, HSE assurance, and budget development/control.

The successful candidate needs to have 5-10+ years experience in petroleum engineering. Experience in project management and production optimization would be considered an asset. The position requires self-motivation, initiative and creative thinking, as well as the ability to work with, and communicate results and interpretations to, a multi-disciplinary team, including geologists, geophysicists, reservoir, and other petroleum engineers.

### RESERVOIR ENGINEER

The Reservoir Engineer will be required to:

- Conduct reservoir engineering studies
- Guide business in optimal appraisal as well as in the development of high volume gas fields.

Interested candidates should possess:

- The ability to work independently as well as part of integrated subsurface teams
- Good communication skills
- Creative and innovative work practices.

Persons with a minimum of a BSc. in Petroleum Engineering or a related discipline may apply. 5-10 years' experience and knowledge of reservoir simulation and gas field development would be a definite asset. Candidates with less experience, however, may be considered.

### How to Apply

Interested candidates are invited to apply by sending a cover letter and résumé in support of their candidacy for the position clearly marked.

**Subsurface Recruitment  
The Human Resources Department (5-T06)  
bp Trinidad and Tobago  
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## Geoscience Director

### American Association of Petroleum Geologists

The American Association of Petroleum Geologists, a Tulsa, Oklahoma-based non-profit association with 30,000+ members world wide, seeks replacement for the retiring Geoscience Director.

The Geoscience Director responsibilities include managing initiation, implementation and marketing of the association's scientific publishing, educational, Distinguished Lecture programs, Hedberg research conferences, and AAPG's digital products and services. The position directs activities of the AAPG BULLETIN, ENVIRONMENTAL GEOSCIENCES (Division of Environmental Geology), Special Publications, and DataPages. The successful candidate will lead development of new Geoscience products and services through liaison with appropriate AAPG committees, including the Executive Committee.

Qualifications include an advanced geoscience degree, being an Active Member of the AAPG. Candidate must have a strong working knowledge of petroleum geology and related sciences. A minimum of 15 years of management and personnel development experience as well as an up-to-date technical background are required.

Applicant should send a letter of application, and resume with complete employment and salary history. Included must be three business or professional references of persons familiar with applicant's professional qualifications.



Send all applications to:

Richard D. Fritz, Executive Director  
American Association of Petroleum Geologists  
P.O. Box 979  
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AAPG is an Equal Opportunity/Affirmative Action Employer.

## DEG

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contributed to broadening this understanding during the past year. I look forward to working with Ken Vogel, my highly capable successor. As I pass the torch I'd like to say that I think we have had a successful year and I hope that we have given Ken a good foundation on which to move forward.

\*\*\*

Among our accomplishments this year include updating the look, feel and mechanics behind our journal, *Environmental Geosciences*. Editor Gerald Baum said it best when he was writing about the EG: "... what a dramatic increase in interest and submissions. I don't want to sound metaphysical, but I sense an up-tick in DEG enthusiasm ... (we) just need to translate that into increased membership."

We also had a very successful series of poster and oral sessions at the regional and national level, particularly in Dallas but also significantly at the

Eastern Section meeting in Pittsburgh last year. I believe the future of our division rests firmly on the peer-reviewed EG, our public outreach through local and regional contacts, information we publish in environmentally related topical books and, most significantly, our Web site.

\*\*\*

However, these areas where we choose to put our collective energy into will only thrive with more active contributing members. We need more division members now. We need you to join – if not to be actively involved, then to show support to our division, because it is the right thing to do to support our profession. Environmental issues in energy-related industries are already inextricably woven into the process of natural resource exploration and development.

\*\*\*

Thank you, again, to everyone in our great organization – AAPG. I thank you for your assistance, support and encouragement over the past year. It has been a great pleasure and privilege to serve as your DEG president.

I will cherish the memories of this past year the rest of my life. □

## CLASSIFIED ADS

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You can reach about 30,000 petroleum geologists at the lowest per-reader cost in the world with a classified ad in the EXPLORER.

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For further information or assistance, call Brenda Merideth at (918) 560-2647 or (800) 288-7636 (Canada and USA).

**DIRECTOR'S CORNER**

# There's Much Cooperation Going On

By RICK FRITZ

John Wooden, the Hall of Fame college basketball coach from UCLA was asked about achievement. He said, "Don't let what you *cannot* do interfere with what you *can* do."

This is exactly the approach AAPG has used in developing opportunities in intersociety cooperation.

Currently, we have approximately 30 joint programs with almost as many sister societies. From conferences to lecturers to digital data, these joint projects help stimulate growth for our respective associations and provide members with new and more comprehensive products and services.

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One of the oldest joint projects is the Offshore Technology Conference (OTC). AAPG is one of the original members of the OTC. The conference is sponsored by a coalition of industry professional organizations governed by the OTC Board and managed through SPE.

In past years, Wolfgang Schollnberger with BP has represented AAPG on the board; Susan Cunningham with Noble Energy is AAPG's current representative on the board.

Each year we have a technical program sub-committee that provides five to six sessions in the overall technical program. Dan Orange with AOA Geophysics Inc. chairs the AAPG sub-committee of the OTC Program Committee, and Craig Shipp with Shell International E&P is the vice-chair. They do a great service for AAPG and the industry. This year, upstream topics ranged from "Petrotechnical Visualization" to "Significance of Transport Complexes in Deepwater Environments."

In addition to the program, AAPG also has responsibilities within the Conduct Committee. Claudia Ludwig and Alf



Klavness are the AAPG and SEG co-chairs for the OTC Arrangements Sub-Committee.

There were over 50,000 registrants at OTC 2004, and they included the "Who's Who" of the petroleum industry. AAPG's technical program was well received with excellent attendance in its sessions.

The income AAPG receives from the OTC is used to pay part of the costs for the AAPG Distinguished Lecture and Visiting Geologist programs.

\*\*\*

When asked about the future, Albert Einstein said, "I never think about the future; it comes fast enough."

Last year, four societies – AAPG, EAGE, SEG and SPE – held extensive discussions about working together to organize a new oil and gas conference and exhibition in the Eastern Hemisphere. During the OTC, the four societies announced one of the newest intersociety ventures – the joint International Petroleum Technology Conference (IPTC).

This bi-annual event will not only serve

our traditional E&P sectors, but also will cover midstream activities and will have a significant focus on gas.

This is the first time our four societies will collaborate to develop a program of this magnitude. The IPTC is designed to have both a strong technical program and a world-class technology exhibition. It will be a comprehensive cross-discipline conference that will provide a special networking opportunity for our members and supporting clients.

The first IPTC will be held Nov. 21-23, 2005, in Doha, Qatar – in the region of one of the world's most extensive gas reserves.

As Einstein indicated, the future is coming fast. But, with all deference to his genius, we think he was a little off on this one. We non-geniuses without lifelong endowments must think about the future. And we did. This looks like a winner.

\*\*\*

AAPG's annual meeting is another example of intersociety cooperation. This year the annual meeting was held with SEPM and our host society, the Dallas Geological Society.

I have had numerous comments from both members and non-members on the success of the conference. Especially noted was the quality of the technical program. We thank all of the volunteers from AAPG, SEPM and DGS for their exemplary efforts.

Each year I receive a few inquiries about combining AAPG's annual meeting with a sister society's annual meeting – usually SEG or SPE. In 1999, then-AAPG President Ray Thomasson and SEG President Bill Barkhouse, asked both associations to look into the possibility of combining an AAPG and SEG conference. The joint analysis showed that the logistics were very complicated and each society would be required to take a significant loss in revenue. Also, we had mixed responses from companies and exhibitors. Most importantly, there was not a great demand from the memberships to make this change.

In the end, it was jointly decided to continue to monitor the situation and let the memberships decide when the time was right – if ever.

\*\*\*

Thomas Edison said, "There are three great essentials to achieve anything worthwhile: One, hard work; two, stick-to-it-iveness; and three, common sense."

I do not know if annual meetings will ever be combined, but I do know that all of these characteristics are important in developing intersociety programs.

For now, we are taking Jon Wooden's advice and doing the things we *can* do. We will do the things we *can't* do as soon as possible.

## Outgoing Observations

# DEG, AAPG Need Each Other

By RIMA PETROSSIAN  
DEG President

Our Dallas AAPG Annual Meeting is behind us, and it was – as always – a good opportunity to learn, catch up with old friends, share views about the industry, find out what is going on in others' area of interest and talk about the organization.

This column marks my last message as DEG president, so I would like to synthesize what I've learned, where DEG has gone and where I think it needs to go.

\*\*\*

First, the tough message: We need more people in the industry and the profession to acknowledge that they need DEG.

Few industries are as visible to the public in their impact on the environment as the oil and gas exploration industry. Drilling in environmentally sensitive areas always arouses public concern, and is often controversial and politicized. As reserves diminish over time, exploration in these areas will be necessary if the

*Environmental issues in energy-related industries are already inextricably woven into the process of natural resource exploration and development.*

demand for oil is to be met. But nothing will happen if the industry cannot show that it can provide for environmentally sustainable exploration.

Even if everyone in the oil and gas industry throughout the world cares about the environment, that won't sway the public's perception of the industry if the public does not see *tangible evidence* of industry's worldwide environmental concern.

One way to make sure that they know is to have a strong environmental division in AAPG and to be able to show both membership numbers and active participation in the Division.

\*\*\*

In contrast, it was great to see all the enthusiastic faces at our booth in Dallas, especially all the young people who displayed genuine interest. Geology students, with whom many of us can still relate to from our own experience in joining AAPG, have a sincere and serious attitude toward preserving the environment – but they also hope to have a long-term career in geology. These goals are not mutually exclusive.

Additionally, some still had no idea AAPG had an environmental division, and they expressed a high level of

enthusiasm for our journal and the information we provide. Constant communication is a must!

I was dismayed to encounter veterans of AAPG who were complacent about the DEG, or members who had allowed their membership to lapse. AAPG needs the DEG. And, those of us in the DEG, especially now, have an obligation to ensure that the wider AAPG membership understands that. Spread the word among your colleagues.

As such, I hope that I have

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