AAPG AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS, AN INTERNATIONAL ORGANIZATION

EXPLORER

APRIL 2008

Money in the Bank

Texas outcrops reveal wealth of data

See page 10

SanAntonio TEXAS
2008 AAPG ANNUAL CONVENTION & EXHIBITION
APRIL 20-23

AAPG EXPLORER

On the cover: Exposures in the Pecos River Canyon of West Texas, where rudist-bearing carbonate grainstones and buildup facies are analogous to the Edwards Reef play in Live Oak County, Texas – an active play near San Antonio, site of this year's AAPG Annual Convention and Exhibition. See story, page 10. Photo by AAPG member Charlie Kerans, the University of Texas at Austin. These outcrops are nearly continuous for tens of miles.

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San Antonio, with its world-famous Riverwalk, is the site of the AAPG Annual Convention and Exhibition, which will take place April 20-23 in the newly expanded Henry B. Gonzalez Convention Center – right by the river, of course.

Photo courtesy of the SACVB

PRESIDENT'Scolumn

Spring Quickens Pace for Activities

By WILLARD 'Will' GREEN

Viva San Antonio!

It's not too late to log on to www.aapg.org and complete your plans to attend the AAPG Annual Convention and Exhibition in San Antonio, April 20-23. In early March pre-registration was running well ahead of that for the previous two annual meetings comparing the same point in time.

An outstanding technical program is in store for us.

A feature added this year is a Climate Change Forum organized by the AAPG Global Climate Change Committee. Priscilla Grew is chair of the 12-member committee and Jeff Levine and John Armentrout will co-chair the forum.

The forum, to be held 8-11:40 a.m. on Wednesday, April 20, will feature five prominent speakers who will discuss basic data that has affected climate change in the past and may be factors in the future. Time for questions is scheduled after each speaker and at the end of the program. (See related story on page 22.)

AAPG will video record the session and make the information available to interested groups.

San Antonio, my hometown, is always fun. Hope to see you there!

Concept Release

AAPG has responded to the Security and Exchange Commission's "Concept Release on Possible Revisions to the Disclosure Requirements Relative to Oil and Gas Reserves" (see March EXPLORER).

The SEC posed a number of questions regarding disclosure requirements and asked for public comment. AAPG responded timely with a document prepared by an ad hoc committee chaired by Pete Rose and including six other AAPG members who also are expert in the specialty of reserve estimation.

To view the complete response, please click on the link on the home page of www.aapg.org.

More Service for Members

AAPG soon will have a new résumé and job posting service available for members on our Web site – the Executive Committee, acting on a recommendation from the Membership Career Services Committee, authorized staff to contract with Boxwood Career Services to proceed with the improved job board (See related story, page 64).

Members seeking employment or consulting work may post their résumés without cost. Employers, including those seeking consulting services, will pay a modest fee to post on the site.

Watch for an announcement when this service is operational.

Green

Congressional Visits Day

Ten AAPG members attended the 12th annual Congressional Visits Day in Washington, D.C., March 5-6.

The first day included morning briefings for earth and space scientists at the American Geophysical Union and afternoon sessions at the American Association for the Advancement of Science. David Curtiss, director of our Washington office (GEO-DC), arranged visits to Congressmen and their staffs on the second day.

Legislative issues discussed were:

✓ Future Work Force Needs of the Oil and Gas Industry.

✓ Preservation of Geological and Geophysical Data.

✓ Research and Development Needs of the Domestic Petroleum Industry in the 21st Century.

The trip was fun as well as informative and we shared our views on the "Hill."

Southwest Section Celebrates 50 Years

AAPG's Southwest Section celebrated its Golden Anniversary at its annual Section meeting Feb. 24-27 in Abilene, Texas.

The "section" began as the Southwestern Federation of Geological Societies in 1958. The Federation evolved into the Southwest Section of AAPG in late 1967 or early 1968.

Bob Gunn was the first AAPG president to hail from the Southwest Section (1978-79) followed by six others, including the current president.

Section members also have been recipients of more than 50 AAPG awards, with Bob Gunn as the sole Sidney Powers Memorial medalist.

I congratulate General Chair Darrell Mauldin and his entire committee for a memorable convention.

Hasta la Vista,

Will Green


2008 PRESENTATIONS
1) Namibia, The Next New Frontier for Giant Oil Discoveries.
2) Cuvette Centrale, D.R.Congo - The sleeping giant potential Hydrocarbon Province.
3) Brazil Geodata & Petrosys - The Best Road Map to Brazil Hydrocarbon Exploration.
4) Salt Dynamics and its Role in Petroleum Migration in Santos Basin: A Case Study Around Mexilhao Field.
5) Risk Reduction in Exploration: Integration of State-of-the-art Technologies & Analysis in HRT & Petroleum Studies.
6) GO DEEP! -The Pre-Salt Supergiant Santos Hydrocarbon System.
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Exploration Risk Assessmen
Southern Santos Basin
Central Santos Basin
Northern Santos Basin
Cabo Frio - Campos Basin
Northern Campos Basin
Southern Espírito Santo Basin
Northern Espírito Santo Basin

Manpower: 'A shortage across the board'

Geologist Pay Reflects Demand

By LARRY NATION
AAPG Communications Director

It has become a familiar story that began three years ago: Manpower needs in the upstream industry coupled with the need to find more resources are causing big rises in salaries for petroleum geologists.

Hold that thought. You'll probably be hearing that again for a while.

The 2008 AAPG EXPLORER salary survey showed a weighted average increase of 9.45 percent in pay for geoscientists. Last year's survey showed a 9.1 percent increase, following a 16 percent boost in 2005-06.

A 35 percent rise in salaries over three years is memorable – and it doesn't look like there's anything in the near future to slow the upward salary projectory.


Ayling

The EXPLORER survey, conducted annually since 1981 by Mike Ayling of MLA Resources in Tulsa, showed the 6-9-year experience category charting the largest increase, with an 18.6 percent rise in salaries.

Closely behind with 17.7 percent in salary growth was the 3-5-year experienced geologist category, which showed an average annual salary of $107,800.

Ayling noted the large increases reflect the shortage of young professionals in those experience categories. Ah, the magic of supply and demand works again.

It also indicates the industry's focus on reloading vacancies being created by retirements, and on retaining new and recent hires.

The almost negligible increase in salaries of new hires "is possibly skewed low by a few bachelor of science-degreed geologists employed by very small companies," Ayling said. Also, cash bonuses are not calculated in the salary survey. A master's degree for entry-level geologists has been the norm. But again, the demand is overwhelming the supply.

Is there a shortage of graduates available for new hires?

"There's a shortage across the board – in all categories," Ayling said, noting that the students who signed up due to the rising energy prices that took off in late 2004 are still matriculating through the educational system and are not yet having a major impact on the market.

Meanwhile, the demand for geoscientists continues to grow.

Part of the Picture

The annual salary survey is based on employed, salaried geoscientists and is based on salaries alone. It does not include bonuses, employee benefits, autos or other perquisites.

It does not attempt to include anyone whose compensation is in the form of consulting fees, retainers or overrides, which Ayling said are on the increase as well.

The purpose of the survey is to provide

continued on next page

2008 Geological Salary Survey

YEARS EXPERIENCE	HIGH	AVERAGE	LOW
0-2	$ 95,000	$ 82,800	$ 58,000
3-5	145,000	107,800	80,000
6-9	153,000	121,100	99,000
10-14	155,000	119,800	100,000
15-19	185,000	151,600	101,000
20-24	260,000	167,400	134,000
25+	200,000	162,800	130,000

Average Salary by Degree

YEARS EXPERIENCE	B.S.	M.S.	Ph.D.
0-2	$ 72,300	$ 86,600	$ 95,000
3-5	91,000	97,500	145,000
6-9	99,000	134,500	105,200
10-14	102,000	120,000	155,000
15-19	101,700	172,500	134,900
20-24	157,000	159,000	202,500
25+	164,500	159,800	176,700

continued from previous page

a yardstick for those interested in assessing their compensation, and Ayling strongly feels that compensation is often a secondary consideration when evaluating overall job satisfaction.

The survey also is based on U.S. salaries only, considered the "gold standard" for the industry. The measurement for international salaries for explorationists is virtually on a country-by-country, case-by-case basis, Ayling said, which makes statistical averaging non-productive beyond the boundaries of any specific country.

Ayling added that many ex-pats are paid U.S.-based salaries, while the national oil companies opt to pay compatriots on a different, lower scale.

Again in the 2008 survey, Ayling said over half of the salaries noted in the survey represent individuals with over 20 years of experience – the largest category of the working geologists. Those geologists entered the profession in the 1970s when prices caused a whopping growth spurt in numbers, followed by almost two decades of alternating layoffs and inconsistent hiring policies.

Many experienced people are seeing very attractive retention bonuses, participations and other incentives, Ayling said. This has mitigated a lot of job-hopping, with the "golden handcuffs" keeping performers from answering the lures of suitors. At least for a while. Those incentives are usually time-bound, and Ayling noted that once those time obligations are met, the shackles are off. Then, watch out, unless the workplace becomes "unleavable" due to professional satisfaction.

Ayling also said the salary figures are feeling more upward pressure this spring "as many smaller companies try to staff up to capitalize on $100-plus oil." ❑

Historical Averages

YEARS EXPER	AVERAGE SALARY 2001	2002	2003	2004	2005	2006	2007	2008
0-2	$59,700	$ 64,000	$ 65,000	$ 65,600	$ 67,800	$ 74,400	$ 82,200	$82,800
3-5	66,000	67,500	71,200	67,700	75,600	81,300	93,400	107,800
6-9	74,200	74,500	78,300	75,700	78,800	95,400	98,500	121,100
10-14	89,400	95,000	96,600	91,900	107,500	114,400	111,500	119,800
15-19	100,600	99,400	102,500	102,500	116,000	119,600	141,000	151,600
20-24	111,700	111,600	113,900	118,100	112,800	139,000	155,000	167,400
25+	117,300	124,000	126,900	125,100	128,300	134,100	149,900	162,800

Have you cast your ballot?

It's Election Season; Vote Online

Have you cast your ballot for AAPG officers yet? If not, now's the time.

Members should cast their ballot online if possible; AAPG has switched to the electronic voting method to reduce election costs, especially postage.

This year, AAPG mailed paper ballots to those members who do NOT have a valid e-mail address or to those whose e-mail addresses bounced back as non-deliverable.

To cast your vote, you will need both your AAPG member number and an assigned code, referred to as an "E-Signature." Both numbers have been provided in your e-mail notification or on the paper ballot, and can be used only one time.

Those who receive a paper ballot can instead choose to vote online; however, do not also return the paper ballot.

Members will be able access the e-ballot by clicking on the AAPG Officer Election icon on www.aapg.org through May 15 noon CDT.

User support is available online.

In the president-elect election members will chose from three candidates – two nominated by the Advisory Council and a candidate who filed a petition to be on the ballot. Voters are instructed to cast the vote in order of preference.

In a Bylaws change effective in 2006, ballots for offices with more than two candidates provide voting in order of preference; the candidate receiving a majority of the "first choice" votes is elected.

Previously, the candidate with the most votes was declared the winner without regard to a majority tally.

The new process allows for determination of a majority without a costly and time-consuming run-off.

If no candidate receives a majority of the "first choice" votes cast, then the candidate who received the least number of "first choice" votes shall be dropped from consideration, and the second choices of those voters whose first choice was the dropped candidate will be deemed those voters' first choice. The process is repeated until a candidate receives a majority vote.

Also on the ballot are candidates for vice president-Sections and treasurer. Races for secretary and vice president-Regions will be on next year's ballot.

Bios are available online. The candidate slate is:

President-Elect

❒ **John C. Lorenz**, Geoflight LLC, Edgewood, N.M.

❒ **Dwight M. "Clint Moore**, DiamondStar Exploration & Production, Houston (petition candidate).

❒ **Ronald A. Nelson**, Broken N Consulting, Cat Spring, Texas.

Vice President-Sections

❒ **David H. Hawk**, Energy Analysis and Answers/Consultant, Boise, Idaho.

❒ **W.C. "Rusty" Riese**, BP Americas, Katy, Texas.

Treasurer

❒ **Edith C. Allison**, U.S. Department of Energy, Washington, D.C.

❒ **Kay L. Pitts**, Aera Energy LLC, Bakersfield, Calif. ❑

Lone Star state roundup

Texas 'Playgrounds' Attract Action

By DAVID BROWN
EXPLORER Correspondent

For plays and forays ...
Spudding and cutting ...
Drilling and infilling ...
There's no place quite like Texas.

Recent rig counts have shown 840 to 870 drilling rigs operating weekly in the state – 80 percent of them with natural gas primary objectives.

Operators can enjoy drilling in areas with proven production, promising prospects, beautiful wide-open spaces and friendly people.

Although truth to tell, $9.50-per-Mcf natural gas and $100-a-barrel oil would have gotten the industry's attention even if Texans were downright surly.

While the vast bulk of oil and gas produced in the state isn't coming from recent exploration wells, new concepts are being tested in old plays all the time.

Current watchwords seem to be "horizontal" and "gas," except in the Permian Basin, where scattered development drilling for oil occurs across the basin.

With that in mind – and mindful of the fact that the eyes of AAPG will be looking toward Texas this month for the Annual Convention and Exhibition in San Antonio – here's a roundup of reports from the field.

Tight Gas Plays, East Texas Basin

East Texas is ground zero for the state's tight-gas sand plays, where companies active in the East Texas Basin provide a good sampling of nationwide unconventional gas players.

Independents dominate drilling, but there's been a re-appearance by majors via acquisition. For example, ConocoPhillips purchased Burlington and its interest in the play.

On the Sabine Uplift on the east side of the basin, aggressive development of the Cotton Valley sands and Travis Peak play continues. Vertical wells abound, but operators are experimenting with horizontals, as well as with downspacing vertical wells to 20-acre spacing.

On the basin's western side, the Travis Peak, Cotton Valley lime, Bossier and Deep Bossier plays remain very active.

The Deep Bossier activity targets prograding wedge and lowstand slope and basin floor sands at depths of 16,000-20,000 feet, typically thicker and much higher pressured than their shelfal counterparts.

Recent rig activity reports showed 74 rigs active in the western part of the basin, and an additional 73 on the Sabine Uplift.

Collectively, over 3,200 wells have been completed in the past two years in these East Texas tight-formation plays, with the 2,440 being Cotton Valley sand wells on the Sabine Uplift.

James Lime Play, East Texas

The on-again, off-again, Lower Cretaceous James Lime play is on again.

Operators have looked at this extensional-basin, carbonate reservoir play in Texas and Louisiana since discovery of the Fairway Field in 1960.

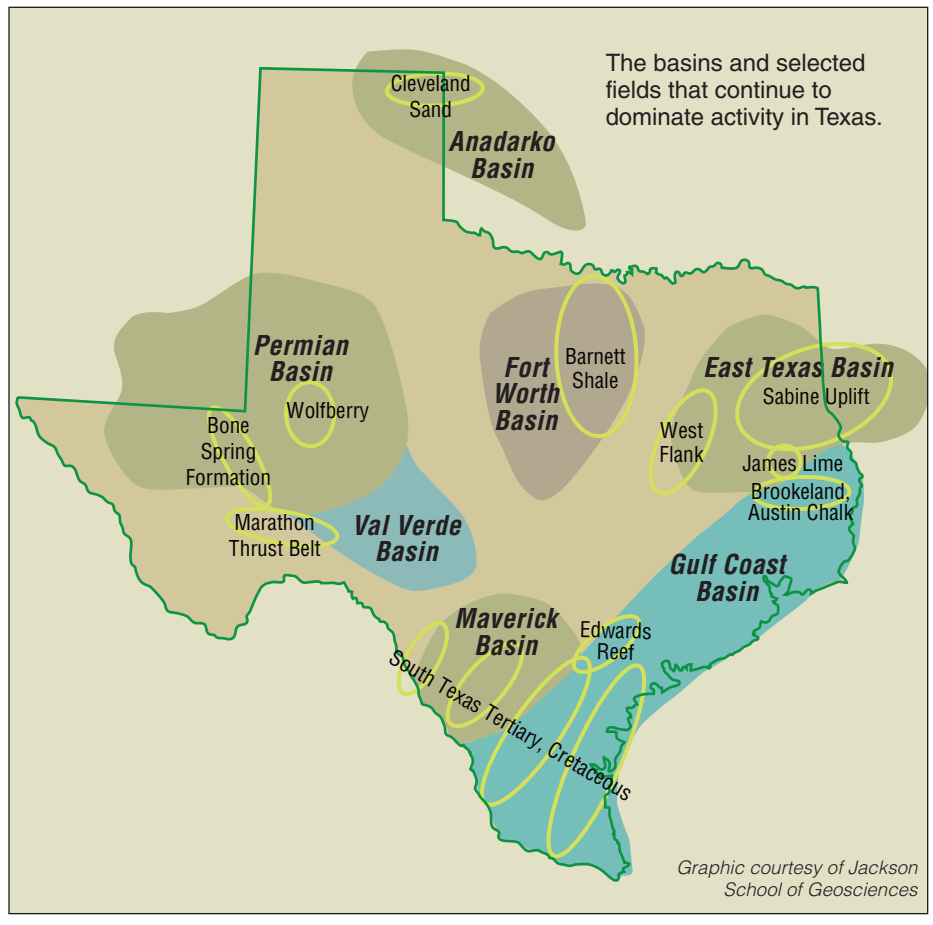
Goodrich Petroleum Corp. of Houston recently completed its second and third horizontal James Lime wells drilled in the Angelina River Trend in Nacogdoches and Angelina counties.

The company's initial James Lime horizontal well was drilled to a total depth of 14,960 feet with an approximate 5,400-foot lateral, and had a maximum test rate of 14 million cubic feet/day and a 24-hour initial production rate to sales of 6.8 million cubic feet/day.

St. Mary Land & Exploration Co. of Denver reported it had increased its acreage position in the James Lime trend to roughly 50,300 net acres by year-end 2007. The company said its leasing efforts are ongoing and competition in the play area has increased markedly.

In Texas, the quest for energy can be found everywhere and anywhere – even at the Dallas-Fort Worth International Airport, where Chesapeake Energy has drilled and completed more than 40 wells as it works the Barnett shale. Chesapeake recently reported it expects to complete a Barnett well every 15 hours, on average, through 2012. At DFW the horizontal wells can sit up close to the edge of the runway and then drill right under the runway, providing almost unlimited opportunity for hydrocarbon recovery.

Photo courtesy of Fort Worth Star-Telegram.



The basins and selected fields that continue to dominate activity in Texas.

Graphic courtesy of Jackson School of Geosciences

Potter

Play information in this article was provided by Eric Potter, associate director for the Bureau of Economic Geology, Jackson School of Geosciences, the University of Texas at Austin.

South Texas Tertiary and Cretaceous

More than 2,000 well completions were reported over the past two years in South Texas trends, which are mostly gas-producing.

The coast-parallel Tertiary-age Frio, Vicksburg and Wilcox expansion-fault trends and the Cretaceous Olmos tight-sands fields in Webb County all had significant drilling activity.

Most of the wells were vertical, but horizontals were drilled in all plays – particularly in the Olmos. Except for the Frio these are tight-sand trends that require hydraulic fracture treatments.

Operators include several major companies, plus large and small independents.

Marathon Thrustbelt Play, West Texas

Using a do-it-yourself model, SandRidge Energy Inc. of Oklahoma City has drilled more than 200 wells in the past four years along the leading edge of the Marathon Thrustbelt south of Fort Stockton, in Pecos County.

Production from vertical well completions in thrust sheet targets – Dimple Limestone, Tesnus sands and fractured upper and lower Caballos Novaculite – has increased to 200 million cubic feet/day. An abstract by Dick Boyce in the March 2008 *West Texas Geological Society Bulletin* suggests that autochthonous Wolfcamp sands also are contributing to production.

SandRidge, formerly Riata Energy, built momentum in this play by experimenting with drilling and completion techniques – using its own equipment and crews – on both lands owned outright by the company and leased properties.

It recently embarked on a major 3-D seismic acquisition program, and a 30-rig drilling program is under way to exploit Pinon field and to drill newly identified prospects.

Bone Spring Formation, West Texas

Most of the Bone Spring formation production and field development has been historically concentrated in carbonate debris flows along the margin

See **Barnett**, page 12

Barnett

from page 10

of the northern Delaware Basin.

Now, new opportunities in siliciclastic slope and basin-floor fans are being actively explored along the eastern margin of the basin.

Current activity is concentrated in Loving, Pecos, Reeves, Ward and Winkler counties, with primary targets in the Third Bone Spring sandstone.

New exploration techniques of these sands include horizontal drilling and acid fracturing with proppant. Wells produce in the range of 170 barrels/day and 350 mcf/day.

The most active operators in the play are Chesapeake Operating of Oklahoma City and Cimarex Energy of Denver.

'Wolfberry' Play, Midland Basin, West Texas

Operators chasing production from the Wolfcamp and Spraberry formations in the same area began referring to the play as "Wolfberry," which is how it's now known by the local industry.

The Wolfberry low-permeability oil play is centered in Ector, Midland and Upton counties, and probably includes Glasscock and Reagan counties.

Reservoirs are slope and basin systems, including debris flows, grain flows and turbidites composed of carbonate detritus in the Wolfcamp or terrigenous sand and silt in the Spraberry/Dean. Natural fractures may also be a factor.

The target zone is up to 3,000 feet in thickness at depths of 7,000-10,000 feet. Selected intervals are perforated and fraced. Completions may include nine to 12 separate frac jobs, starting lower in the Wolfcamp and moving up-section.

In the 1980s and 1990s, the Wolfcamp basinal carbonate play was pursued using vertical wells to explore 3-D seismic facies prospects.

Many of those wells were abandoned because of low permeability. The Wolfberry play revisits many of those unsuccessful areas, with multistage frac jobs making the difference in viable production.

In some cases the lower zones may be put on production for several months before the upper zones are added and commingled. Initial production ranges from 30 to 125 barrels/day.

Pioneer Natural Resources of Irving, Texas, drills 400 Spraberry wells a year in the play area, and some of these wells qualify as Wolfberry. Other operators cited are Oxy USA, St. Mary Land & Exploration, and ExL Petroleum Co., Henry Petroleum Corp. and Cambrian Management Ltd., all in Midland.

Brookeland Field, East Texas, Austin Chalk

Horizontal-well development of the Austin Chalk reservoir in Brookeland Field continues. Major operators Ergon Energy Partners and Anadarko E&P dominated drilling action on the Texas side in the past year.

The Brookeland trend passes through parts of Tyler, Newton, Sabine and Newton counties, extending eastward into Louisiana. In Texas, Tyler County saw most of the 2007 drilling, with over 20 new wells.

Peak rates were in the range of 2,000 barrels/day and 18 mcf/day. High oil and gas prices drive this play, in which typical decline rates are around 80 percent in the first year.

Cleveland Sand Horizontal Play, Lipscomb County (Northeast Texas Panhandle)

Jones Energy Ltd. of Austin is leading the way in redevelopment of the tight Pennsylvanian Cleveland sand using horizontal wells. The sands are in eastward-prograding deltas, fluvial trends and incised valley deposits, according to publications by the BEG's Tucker Hentz.

Over 350 horizontals have been drilled in this northern Panhandle play, exploiting sands with microdarcy permeability. Ultimate recoveries are estimated at 1.5 bcf per well, following completion utilizing multistage open-hole frac jobs.

The areas being redeveloped were originally developed with vertical wells. Jones operates for itself and also on behalf of several major companies whose large acreage spreads in the area are held by production.

Edwards Reef Trend, Live Oak County, South Texas

Pioneer leads this resource-type play, based on its success in the Pawnee Field. It estimated 300 bcf of ultimate expected production at Pawnee and reported eight new discoveries on the trend.

Development drilling was occurring where 3-D seismic is available, and more than 900 square miles of new 3-D seismic are planned. Dozens of north-northwest directed horizontal wells have been permitted.

The company completed five wells in Live Oak County in 2007, with a median peak production rate of approximately 1.5 million cubic feet/day.

Barnett Shale, Fort Worth Basin

Any summary of Texas drilling activity has to include the Barnett shale in the Fort Worth Basin.

Total producing wells now number about 8,400, and daily production for the play in 2007 was about 2 bcf. A total of 3.6 tcf has been produced, with 175 operators completing more than 3,600 wells in the play in the past two years.

Hot spots continued to be Johnson and Tarrant counties, but the Baker-Hughes rig count in late February showed 171 rigs active throughout the play, almost all engaged in horizontal drilling.

In many areas, state-of-the-art, highly automated, custom-designed rigs are drilling multiple horizontals from a single surface pad. Frac operations in several areas have been centralized to cut costs and reduce surface impacts.

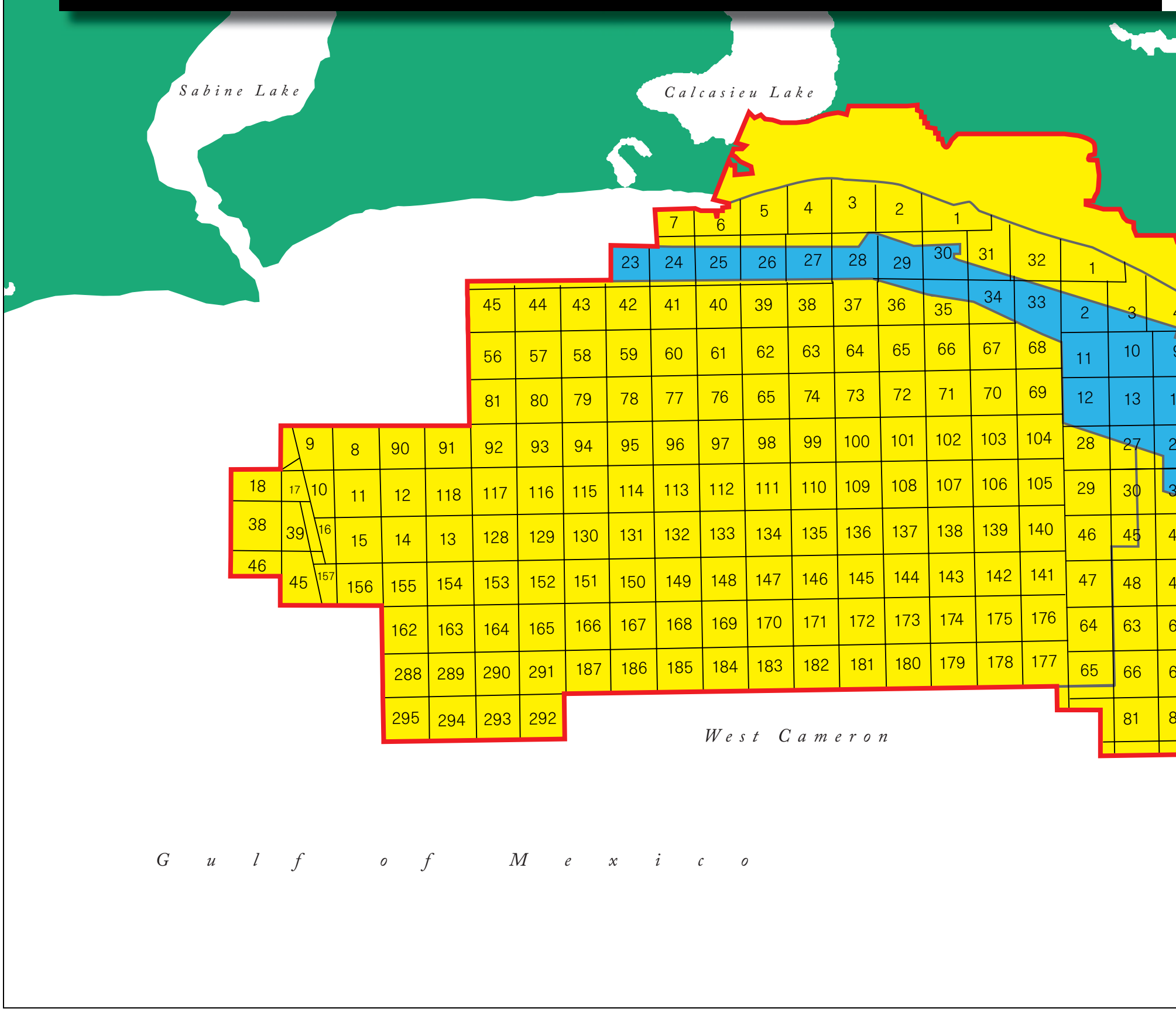
Devon Energy of Oklahoma City continues as top producer, but Chesapeake (also of Oklahoma City), XTO Energy of Fort Worth and EOG Resources of Houston, also are very active.

Both EOG and XTO recently presented development plans indicating that recoveries of 50 percent of gas-in-place may be possible, utilizing aggressive downspacing, in some cases to less than 400 feet between adjacent horizontal wellbores.

Chesapeake recently reported it expects to complete a Barnett well every 15 hours, on average, through 2012. The company also had excellent results in the early phase of a drilling program beneath the Dallas-Fort Worth Airport.

The city of Fort Worth estimates that more than 2,000 wells will be drilled from some 500 surface locations within the city limits, all subject to comprehensive permitting provisions, including setback, noise and lighting restrictions. ❑

(Editor's note: Eric Potter, an AAPG member, is with the Bureau of Economic Geology, Austin, Texas.)



Prospects draw attention at NAPE

Tucumcari Basin Causing a Buzz

By LOUISE S. DURHAM
EXPLORER Correspondent

Take a stroll through the exhibit area at any of the bi-annual NAPE confabs and it's a given that you'll encounter a host of attractive drilling prospects on display – perhaps something that might even offer the potential to get in on the ground floor of a whole new play.

The recent NAPE event in Houston in February was no exception.

Consider David Petroleum, for example, which in conjunction with Cuervo Exploration was showing a deal in New Mexico's Tucumcari Basin that was creating a lot of buzz.

That seems appropriate, in two ways:

✓ NAPE is a place where people come to seek the latest opportunities.

✓ New Mexico in general appears to be increasingly attractive to the E&P community these days.

For starters, New Mexico boasts a spate of natural gas reservoirs known to harbor an unusually high concentration of helium. In fact, it's being postulated the state could become a major producer of this strategic element (see February EXPLORER).

Something Old, Something New

When it comes to hydrocarbons per se, the as-yet-unproductive Tucumcari Basin has become an attention-grabber.

Call it a new old play.

The basin, which sprawls across an area of 5,000 square miles or so in east-central New Mexico, has been the site of on-again, off-again exploration action since 1909, according to AAPG member Ron Brodhead, principal senior petroleum geologist at the New Mexico Bureau of Geology and Mineral Resources.


Broadhead

In the latter half of the century, the basin experienced several rounds of deeper exploratory efforts using rotary drilling technology, according to Brian Brister, another AAPG member and a geologist at Gunn Oil Co. and Cuervo Exploration.

Those wells encountered numerous oil and gas shows.

The industry boom times of the early 1980s lead to renewed interest in the basin, which resulted in several small but significant gas discoveries, Brister noted. But the lack of a pipeline in conjunction with the precipitous oil price drop during the middle of the decade put an end to this exploration phase.

There's nothing like rising oil and gas prices to trigger renewed enthusiasm for an area with such a checkered drilling history.

"The New Mexico State Land Office sponsored research by the New Mexico Bureau of Geology and Mineral Resources that ultimately stimulated higher bid prices at auction in a 'mega sale' in 2003," Brister said.

"Much of the state and federal lands were leased throughout the basin, and several companies began to make their holdings contiguous by filling in with fee holdings by leasing the larger ranches."

During this spate of activity CKG Energy drilled eight wells – including some that were sited along Interstate 40 where they flared gas, which Brister called "an unavoidable public display of the potential future of the region."

These wells are currently shut-in by current owner Tucumcari Exploration.

A number of companies are marketing prospects and leaseholds in the region, according to Brister. He noted also that some larger independents appear to be contemplating a move into the area.

A Fine Romance

The ongoing main event these days is a well operated by SWEPI (Shell), which re-entered a borehole drilled in 2006 by Cuervo Exploration, which had encountered shows in this well and also two other wildcats.

Thirty-foot flares reportedly have been spotted from the Shell operation, and the company has received approval from the New Mexico Oil Conservation Division to conduct additional flaring.

"This is the well that at the moment has the most romance to it in terms of a well that has been drilled, pipe run on it and we know significant completion efforts are going on with it," said Bill Owen, vice president/exploration manager at David Petroleum.

Given an average density of approximately one sufficiently-deep wildcat well per township, the basin is grossly under-explored, according to Brister.

It's a challenging area.

"The primary source rocks appear to be Pennsylvanian black shale deposited within narrow strike-slip derived sub-basins beneath the broader and shallow Permian Tucumcari Basin," Brister said. "Some sub-basins may require wells 14,000 feet deep to test all objectives.

"The key to exploration is to delineate

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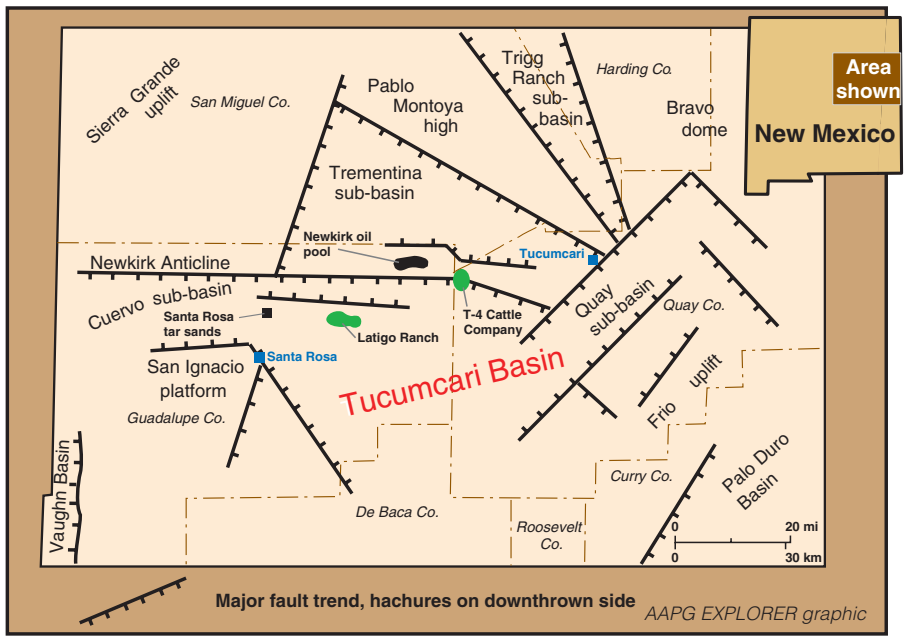

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the sub-basins and determine the discreet petroleum system related to each.

"Targets range from gas in deep basin-centered tight sandstone to basin-flank and flanking uplift conventional traps of migrated gas and oil," Brister said. "Where oil has migrated into the shallow Triassic fresh water aquifer, it is biodegraded to heavy oil or tar.

"The Cuervo-SWEPI apparent discovery targeted one of the sub-basins (known as the) Cuervo graben, but there are numerous, probably similar basins based on existing well and seismic data."

Exciting Prospects

There's still acreage to be had, but Owens noted that most of the large blocks of acreage in the areas they consider to be prospective are leased.

In fact, David and Cuervo, along with their respective partners, have snapped up close to 16,000 acres surrounded by at least 18 wells with numerous shows within the primary Pennsylvanian targets, according to Owens.

He noted the group has interpreted 200 miles of seismic on a prospect having multi-pay potential and more than 1,200 feet of siliciclastic-rich Pennsylvanian section.

"We anticipate 2008 to be a very exciting year for the basin," Owens said. "This is a large basin with tremendous potential, but these things take such a long time to do and the clock is always ticking on people's leases, including Shell.

"Knowing, as we believe, that they have some type of significant discovery and they have made such a significant investment by the acquisition of more than 30,000 acres in their area of interest in addition to spending a huge sum of money on that well," Owens said, "we think this year they're likely to drill a good number of wells up there to help them determine the areal extent of their field.

"It's going to take substantial drilling in the basin to justify the infrastructure necessary to get the product out, and that's why all of us are pleased to see Shell in the play," Owens noted. "And, it's exciting to have a major like this coming back in to the continental U.S."

But revving up the action in the region may be a slower process than desired.

"Another complication of dealing in a new horizon like this is there's not a lot of drilling crews available for that area," Owens said. "Most of them will have to be brought in from northwest or southeast New Mexico or Oklahoma.

"But this is an opportune time for companies – especially large ones – to look to the future and take the chance that this may be one of the newer, larger fields to be discovered in many years." ❑

NAPE Numbers Continue to Rise

Now in its 16th year, the NAPE Oil and Gas Expo continues to provide an incomparable networking venue for E&P players. NAPE attendance soared this year with nearly 16,000 registrants for the event, held in early February in Houston.

Some 1,610 exhibit booths housing prospects, producing properties, international opportunities and cutting-edge technology covered more than 10 acres of the George R. Brown Convention Center.

This year the International Pavilion, a wholly owned, for-profit subsidiary of AAPG, partnered with NAPE on an enhanced and enlarged international section.

For the first time IP combined both national oil companies and ministries with the international oil companies at an exhibition and had approximately 115 booths, according to IP administrator Gina Godfrey.

NAPE is presented by NAPE Expo LP, which is comprised of the American Association of Petroleum Landmen, AAPG, the Independent Petroleum Association of America and the Society of Exploration Geophysicists as limited partners.

Don't miss the increasingly popular Summer NAPE Expo, to be held Aug. 27-28 in Houston. Go to www.napeexpo.com to register for this must-attend midyear event. ❑

Convention time has arrived

AAPG Returns to San Antonio

By VERN STEFANIC
EXPLORER Managing Editor

A famously festive city that boasts historical shrines, a celebrated "Riverwalk" and the excitement of "Fiesta!" is about to become the focus of the AAPG universe.

The 2008 AAPG Annual Convention and Exhibition – the Association's 93rd annual meeting – will be held April 20-23 in San Antonio at the Henry B. Gonzalez Convention Center.

It marks the fifth time that San Antonio and the South Texas Geological Society are serving as hosts for the meeting, and the first time since 1999.

The meeting's theme – "Deliver the Conventional; Pursue the Unconventional" – already has generated a large amount of excitement, with the early pre-registration numbers running among the top annual meetings ever.

"The attendance is apparently going to be higher than we ever anticipated, said Gene Ames III, the meeting general chair, "and we are pleasantly surprised at the response to the short courses and field trips that are being offered."

He was referring to the 16 short courses and 12 field trips that cover the latest in geosciences knowledge and technical advances – everything from carbon sequestration to 3-D seismic interpretation to professional ethics.

Also appealing are the more than 1,000 oral papers and posters that will advance the science of geology, plus nine forums or special sessions that promise to be compelling, informative and often provocative. Forum topics include:

✓ Global Climate Change.
✓ Economics of Natural Gas and Alternative Energy.
✓ Discovery Thinking.
✓ The Future of Unconventional Resource Plays.
✓ Embracing Diversity in a Global Work Force.

Famed oil man Ray L. Hunt will provide this year's Michel T. Halbouty Lecture, speaking on "Distinguishing Successful Wildcatters: How Your Company Can be Among the Best."

Add to that the various luncheon speakers, a large exhibits hall filled with the latest in information and technology and a variety of entertainment and culture activities, and convention organizers say you have the setting for a superb conference.

"You can expect numerous opportunities to interact with a variety of professionals, scientists and leaders in your industry," Ames said.

"You will be educated on recent advances in new and unconventional plays, assessment of risk, bypassed pay and new insights into climate change and source rocks among other things," he added.

And then there are the cultural attractions.

"There will be plenty to do after the convention closes for the day," Ames said "San Antonio is rich in culture and those that have never been here, especially during Fiesta, are in for a big surprise."

The convention officially starts at 4 p.m. Sunday, April 20, with the opening session, featuring AAPG President Will Green's address plus the presentation of AAPG honors and awards.

The traditional Icebreaker event begins one hour later in the exhibits hall.

This year's opening session also will feature the presentation of a new AAPG Foundation award (see story, page 66).

The awards ceremony itself will feature the posthumous awarding of the Sidney Powers Memorial Medal, AAPG's highest honor, to Fred Meissner, who died in September, shortly after being told he would receive the award.

Also being honored posthumously will be John D. "Jack" Edwards, one of this year's recipients of a Distinguished Service Award.

Other meeting highlights include:

✓ The Career Center, located in room 207, will offer a variety of tools and special events for attendees to connect to employment opportunities, including two "Seven-Minute Power Networking" events at 3 p.m. on Monday and Tuesday.

✓ Morning and afternoon refreshment breaks will be offered both April 21-22 in the exhibits hall.

✓ The Sundowner Reception – the official end to the meeting – will be held Wednesday at 5-6:30 p.m. at the convention center. ❑

Explore the Floor – Win a Jeep Wrangler

"Explore the Floor" in San Antonio and have a chance to win prizes – with the grand prize being a 2008 Jeep Wrangler.

To be eligible to win, meeting registrants must take the game card they will receive at registration and visit the 15 sponsoring exhibitors, where they'll receive stamps for the card.

Once a card is complete, just drop by the Explore the Floor booth near the Sidewalk Café (it'll be easy to find – it's where the Jeep is parked).

Cards will be validated and entered for daily drawings for prizes.

Drawings will be at 5:15 p.m. on Monday and Tuesday and at the morning coffee break on Wednesday, the final day of the meeting. The grand prize will be awarded at the final drawing.

YOU MUST BE PRESENT TO WIN prizes at the drawings.

Exhibits hall hours are:

✓ Sunday (April 20) – 5-7:30 p.m.
✓ Monday-Tuesday (April 21-22) – 8:30 a.m.-5:30 p.m.
✓ Wednesday (April 23) – 8:30 a.m.-noon.

Only one person can win the Jeep, but everyone can make contacts and get new ideas and make contacts on the exhibits hall.

Explore the Floor. ❑

House of Delegates To Choose Officers

House of Delegates Nomination and Election Chair Ed Dolly (Rocky Mountain Section) and his committee have announced candidates for House Officer positions, which will be decided during a vote at the HoD meeting in San Antonio.

One-year terms for the officers begin July 1, with the chair-elect assuming the HoD chair July 1, 2009.

Chair-Elect

❒ **Deborah King Sacrey**, consultant, Houston.

❒ **Steve Sonnenberg**, geology professor and Charles Boettcher Distinguished Chair in Petroleum Geology, Colorado School of Mines, Golden, Colo.

Secretary/Editor

❒ **Sigrunn Johnsen**, senior geologist, North Africa and Middle East department, RWE Dea, Hamburg, Germany.

❒ **Erik Mason**, manager-new ventures West, Gulf of Mexico, Shell E&P, Houston.

Two Proposals On HoD Agenda

By MARTIN D. HEWITT
Chair, House of Delegates

The 38th annual meeting of the House of Delegates will be held on Sunday, April 20 in San Antonio, right before the start of the annual convention.

Delegates will be discussing two amendments at the meeting – one to the House's Rules and Procedures and one to AAPG's Bylaws.

✓ Rules and Procedures Chair Steve Sonnenberg (Rocky Mountain Section) and his committee are proposing an amendment to Article I. B, which deals with the way in which the number of delegates is determined for U.S. affiliated Societies versus international Regions. The amendment is being proposed to bring the Rules and Procedures in compliance with the AAPG's Constitution and Bylaws.


Hewitt

Amendments to the HoD Rules and Procedures require approval of a majority of the delegates present and voting at the meeting.

✓ Constitution and Bylaws Chair Paul Hoffman (Gulf Coast Section) and his committee are proposing an amendment to Article XI, Section 8, which will provide the AAPG Executive Committee with the authority to expel a member who falsely stated his or her qualifications on an application for AAPG membership.

This recommended amendment results from consideration of concerns expressed that in some instances the burdens placed on members of the Ethics Committee and the Advisory Council, who have responsibility to adjudicate grievances, are unduly onerous and time consuming.

The committee unanimously felt that such grievances could be addressed more efficiently within the process stipulated in Section 8, Alternative Procedure, while maintaining reasonable due process protection.

An AAPG Bylaws amendment requires a two-thirds affirmative vote of the Delegates present and voting at the meeting.

* * *

Honors and Awards Chair Jim McGhay (Mid-Continent Section) and his committee will be recognizing several deserving awardees at the meeting:

✓ The Distinguished Member of the House award will be given to **John Brooks** (European Region), **Alan DeGood** (Mid-Continent Section) and **Patrick Gooding** (Eastern Section).

✓ The House Long Service Award will be received by **Jeannie Mallick** (Gulf Coast Section).

✓ Also, delegates reaching nine- and 15-year service milestones will be recognized with Certificates of Service.❒

Tyler Priest Set For Luncheon Talk

Tyler Priest, chief historian for the Association of International Petroleum Negotiators history project and author of *The Offshore Imperative: Shell Oil's Search for Petroleum in Postwar America*, is the speaker for this year's All-Convention Luncheon in San Antonio.

The luncheon, which also will include recognition of Mary Fitts as the AAPG Teacher of the Year, is set from 11:30 a.m.-1:15 p.m. Monday, April 21.

Priest, also this year's winner of the AAPG Geosciences in the Media Award, will talk about Shell's role in offshore Gulf of Mexico during his speech. He is chief historian for two Department of Interior projects involving the offshore industry, and currently is also working on two other books about the history of offshore oil. ❒

Data is reality

Geology One Key to Climate Models

By DAVID BROWN
EXPLORER Correspondent

You could sum up Eric Barron's response to the climate change/global warming issue in four words:

Less controversy. More science.

Barron will discuss "The Changing Debate on Global Warming" as speaker for the DEG luncheon that will be held Wednesday, April 23, at the AAPG Annual Convention and Exhibition in San Antonio.

Expect to hear a lot about science, because Barron believes the only way forward in that debate is through good science.

In particular, he thinks AAPG can bring something important to the table for calibrating climate change.

"AAPG should lead on its strength," he said, "which is geology."

Leading the Way

Barron is sort of a Batman-like superhero of earth-system science.

By day, he's dean of the Jackson School of Geosciences at the University of Texas at Austin.

In full array, he's an expert on climate systems and modeling who holds degrees in both geology and oceanography, with a deep understanding of how earth systems interact.

He served as chair of the National Research Council's Climate Research Committee from 1990-96 and of the council's Board on Atmospheric Sciences and Climate from 1999-2003.

Barron

> "I think there's a lot of mystery to climate models, and there doesn't have to be."

In addition to his work with AAPG, he's a fellow of the American Meteorological Society, the American Geophysical Union and the American Association for the Advancement of Science.

Barron has been editor of "Palaeogeography, Palaeoclimatology, Palaeoecology," "Global and Planetary Change" and the e-journal "Earth Interactions," and associate editor of the "Journal of Climate."

A member of the board of governors of the Joint Oceanographic Institutions, Barron has served as scientist on the research vessels *Glomar Challenger* and *Oceanus*.

He received NASA's Distinguished Public Service Medal and currently is a member of NASA's Earth Sciences and Applications Advisory Committee.

And so on, with activities and honors in several other Earth Science areas. His focus for AAPG will be explaining current research and modeling in climate change.

A Sensitive Approach

Barron said his luncheon presentation won't contain much controversy, but that's more a matter of program than of purpose. His talk follows the convention's Interactive Forum on Global Climate Change, which will feature a panel of experts on climate-related topics. (See related story, page 24.)

At the luncheon, Barron will examine how sensitive the climate system is to change factors and how well we can model climate today.

Geology is one key to examining the effectiveness of climate models, he said.

Climate "sensitivity" has to account for known changes in the Earth's climate during the past, Barron noted.

"We can ask, 'How sensitive does the climate system have to be to include the ice ages of the Pleistocene and the warmth of the Cretaceous?'" he said.

Geology preserves an essential record of changes that have taken place on the planet from ancient times to the present, including the effects of weather and climate.

"You're basically saying that geological data is reality," Barron said. "The geologic record demands that the climate has to be sensitive to changes."

Looking Ahead?

On the other hand, we can't judge the effectiveness of climate models in predicting the future, because we don't know what the future is yet.

However, we can use known data to find out how successfully climate models can predict changes known to have happened. Barron called that "modeling the past."

Put simply, if your climate model predicts that heavy rain, snow and flooding should have taken place in an area known to have been hot and dry, your model has problems.

Geology provides the roadmap to past climatic conditions, so Barron believes in using known geologic data to access climate model effectiveness.

Based on that approach, how well do the models work right now?

"It's a mixed story," Barron said.

"If we were to look at storm stratification and we pick a time like the Permian, do the models give you the right storm tracks? Remarkably,

See **Climate**, page 24

Experts to Discuss Climate Change

The AAPG Interactive Forum on Global Climate change will be held from 8-11:45 a.m. Wednesday, April 20, during the AAPG Annual Convention in San Antonio.

The forum, set in room 217 B/C of the Henry B. Gonzalez Convention Center, will feature a panel of experts presenting 25-minute talks of particular interest for AAPG members.

It is intended to provide a venue where information relating to global climate change can be presented and discussed in a scientifically objective setting.

Time will be provided after each speaker for dialog among the panelists and for audience questions and participation.

Jeffrey Levine and John Armentrout, AAPG vice president-Sections, are the forum co-chairs.

The forum is the first major event created by AAPG's newly formed Global Climate Change Committee, a 12-member group that serves as the focal point within AAPG for issues relating to climate science.

"Many of the issues that people would identify as hot-button issues are actually addressed in this (forum)," said committee member **Eric Barron**, dean of the Jackson School of Geosciences, the University of Texas at Austin, and one of the forum speakers.

"We picked these speakers because we know these topics are ones that the membership has a lot of debate about," he said.

Barron's talk during the forum will address "What is the role of carbon dioxide in climate change during Earth history?"

Other forum panelists are:

✓ **Gerald North**, Distinguished Professor of Atmospheric Sciences, Harold J. Haynes Endowed Chair in Geoscience, Texas A&M University – "Surface Temperature Reconstructions Over the Last 2,000 Years – Data Sources and Interpretations."

✓ **Kurt Cuffey**, professor and department chair, Department of Geography, University of California, Berkeley – "The Evidence for Changing Climate Recorded in Ice Sheets and Mountain Glaciers."

✓ **Judith Lean**, space science division, U.S. Naval Research Laboratory, and Fellow-National Academy of Sciences – "How Variable is the Sun and What are the Links Between This Variability and Climate?"

✓ **Thomas Peterson**, Climate Analysis Branch-National Climate Data Center, National Oceanic and Atmospheric Administration – "Modern Temperature Observations: The Data and Their Interpretation." ❑

Climate

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they do," he noted.

Models also can predict the right climatic conditions for high productivity in the oceans, reflected in high rates of sedimentation, he said.

But climate models don't work as well when trying to predict other known realities, like the range of temperatures from the poles to the equator.

"It's not a perfect story," he said. "We have distinct issues when we try to simulate the character of the temperature distribution."

Weather or Not

Unlike some other climate experts, Barron doesn't talk like he was born on a college campus – although he was, on the campus of Purdue University in Lafayette, Ind., in 1951.

He attended Florida State University and studied geology as an undergraduate, but his eye was always on oceanography and earth-system studies.

"I decided, as plate tectonics was emerging, to look into how that would affect climate and oceans," he said.

In 1980, Barron received his doctorate in oceanography from the University of Miami. He served as a research fellow at the National Center for Atmospheric Research in Boulder, Colo.

The center had just acquired a Cray supercomputer, at that time the world's most powerful and second-fastest computer, and an essential in handling the huge amounts of data required for climate research.

"I ended up becoming the sole geologist in an institution devoted to studying climate and doing climate modeling," he recalled.

Barron moved to Penn State University in 1986 and eventually became dean of its College of Earth and Mineral Sciences from 2002-06.

As a member of AAPG's recently formed Global Climate Change Solutions Committee, he helps bring to light the science behind the climate debate.

"You have a group of people (on the committee) who are very interested in helping to educate the membership on this important concept," he noted.

Fortunately, Barron said, the focus is on building a broader, public understanding and "it's not a group that sits down and argues a lot."

See **Realities**, page 28

Panel to launch 100th AAPG anniversary activities

Exploration Insights to be Offered

By BARRY FRIEDMAN
EXPLORER Correspondent

AAPG's 100th Anniversary Committee officially begins its decade-long examination and documentation this month of "100 Who Made a Difference" – specifically, geologists who have made their mark in the industry and profession and, most importantly, how they did it.

Let the celebration begin.

An AAPG forum titled "Discovery Thinking," featuring the first six to be recognized and who will share their insights and wisdom, will be held from 1:15-5 p.m. Monday, April 21, in San Antonio during the AAPG Annual Convention.

The forum will celebrate the accomplishments and professional lives of its first group: Marlan Downey, Bob Gunn, Alfredo Guzman, Dudley Hughes, Herbert Hunt and Clayton Williams – six geologists who have inspired colleagues to see challenges and opportunities in a new light, according to Charles Sternbach and AAPG Secretary Ted Beaumont, organizers of the event.

Where Credit is Due

AAPG formed the 100th Anniversary Committee to plan the celebration and recognition of the Society's centennial in 2017.

And one of the program's pillars, according to Sternbach, is to record those hundred geologists who made the most profound difference in both the profession and the industry and to bring their achievements to a broader audience.

"The Discovery Thinking forum is the latest in a series of wildcatter panels," Sternbach noted. "My interest in these programs began back in 1997, when I was among many inspired by past president Jim Gibbs' AAPG panel at the 1997 Dallas annual meeting."

Among the Legendary speakers that day, he remembered, were Tom Jordan and Michel T. Halbouty.

"It is clear that the personalities of our business, and how they overcome challenges on the path to success, captivate fellow geoscientists," he said.

Beaumont adds that those honored exemplify the "skillful application of information" and have created new exploration concepts.

The Discovery Thinking forum will include a symposium by the six inductees, who will each talk on topics such as philosophy of exploration, lessons learned and professional insights. According to Sternbach and Beaumont, the co-convenor, this will give listeners an idea about the "art of exploration."

Beaumont believes the program needs to happen. And soon.

"The decade-long investment of time and energy are important because many of those people who are the heroes of the past have stories that need to be told today," he said.

"We feel it is important to document their approaches to exploration for future generations of oil and gas explorers."

Go for Broke

Of the six participants in San Antonio, Beaumont says each is a veteran of the petroleum industry renowned for successes in exploring for and finding hydrocarbon reserves.

One recipient, Alfredo Guzman, who has been with Pemex Exploración y Producción in Mexico since 1974, remembers his start in the profession as being less than auspicious.


Sternbach


Beaumont

"It was a Wilcox gas sand in northeast Mexico that was supposed to be present in an extension well, but after drilling, it didn´t show up," Guzman recalled. "My boss and other managers involved claimed that the sand had pinched-out, but my team and I interpreted that its absence was due to normal faulting.

"We proposed a side track to find the sand in the footwall block," he said. "Our view prevailed, for which my boss exclaimed that we were going to be thrown in the slammer for throwing away company money.

"When the sand showed up in the sidetrack logs, we sent him a copy with the comment, 'We are safe from going to Alcatraz.'

"I learned that managers were not always right," he said, "and that if I was going to succeed I had to take risks."

Persistence

Beaumont believes it is that kind of thinking that makes a special geologist. To confirm it, he sent out surveys to some of the industry's best-known figures and asked that very question.

continued on next page

Six Oil Giants Will Share Stories

AAPG's Discovery Thinking Forum, the inaugural session of the AAPG 100th Anniversary Committee's program to recognize "100 Who Made a Difference," will be held from 1:15-5 p.m. Monday, April 21, in San Antonio during the AAPG Annual Convention.

The forum will present six speakers who will each have a chance to talk about their experiences – and lessons learned – from their storied careers.

The speakers are:

Bob Gunn, president, Gunn Oil.

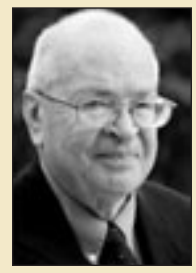
According to Sternbach, Gunn evokes the very tenacity that the "100 Who Made a Difference" tries to celebrate.

Gunn

Gunn served as AAPG president from 1978-79, and in 1997 he received the Sidney Powers Memorial Medal.

On the profession, he once wrote, "Most people think in three-dimensional terms, but the petroleum explorationist must think in as many as six. The fourth dimension is time, the fifth is money, and the sixth is politics."

Marlan Downey, chairman, Roxanna Oil.



Downey

Downey, a past president and Honorary Member of AAPG, began his career with Shell Oil in 1957; by 1969 he was Shell's youngest chief geologist, and four years later he became Shell's Alaska division exploration manager.

He moved to Shell's International Exploration and Production in 1977, became vice president of Shell and

See **Discovery**, next page

continued from previous page

The top answers on the characteristics needed to succeed in the profession were creativity, resourcefulness and confidence – but to Beaumont, the most important is "persistence."

Looking ahead, both Beaumont and Sternbach agree it will take those same skills for the industry and profession to flourish in the 21st century.

"I have been impressed with the young professionals who I have met who are just now entering the profession," Beaumont said. "They are anxious to learn how to find oil and gas, and most of them realize that the latest technology is just part of the equation.

"Many of them intuitively seem to realize that finding oil and gas involves the skillful application of imagination grounded in solid data," he continued.

"They have strong computer skills, which are useful for manipulating the large data sets they must deal with, but many of them realize there is more to exploration than being good with a computer."

Think Again

For Guzman, he says he learned about the intangibles of exploration years ago at a seminar – presented, in fact, by Beaumont – in which he learned the link between art and science.

"He exposed me to the ideas about creativity and the exploration philosophy of some eminent explorationists such as Wallace Pratt, Parke Dickey and Norm Foster," he recalled. "When I was inducted as a member of the Mexican Academy of Engineering, I used creativity as the theme for my acceptance conference."

Beaumont realizes that the challenges ahead for geologists, while daunting, are also familiar.

"Right now we are in a transition," he said. "For the last 20 years, our industry has gotten a lot out of old oil and gas fields by drilling infill wells and step-out wells. The new leaders need to learn how to explore again. The speakers in the Discovery Thinking forum can help them start that process.

"I would say that human nature never changes. We all want simple answers," Beaumont observed. "Many company leaders would like to think if they just bought the best technology they would be successful in their exploration efforts. Creativity is not a simple process."

"We have to learn to apply creativity to be effective explorationists," Guzman adds, "and the better thing is to do it while having fun and making a difference."

Sternbach believes the keys for both a successful career in the geosciences are the same as they are for any profession.

"Persistence and hard work," he said, and then he backed his view with a familiar tale.

"One of my favorite stories is of a friend of mine who drilled 14 dry holes over 30 years of wildcat exploration while living overseas," he said. "By all accounts he should have gone into another business. But he loved what he was doing so much that he didn't know what else to do.

"Of course, wildcat number 15 came in as a giant discovery!" ❑

Discovery

from previous page

then president of Shell's international subsidiary, Pecten International, retiring in 1987 after 30 years of service.

He is presently a professor of geology at the University of Oklahoma and chief scientist at the Sarkey's Center at the University of Oklahoma.

Downey, who has been knighted by the president of Cameroon (the first businessman to receive that honor), has said "geology is a science – exploration is a business," but perhaps is best known for the following:

"If you want to depend on luck in exploration, hire a lottery winner."

Guzman

Alfredo Guzman, Pemex Exploración y Producción in Veracruz, Mexico.

Guzman is widely published and has served on a number of international committees and boards. He also has received the Mexican Petroleum Institute Award for his contributions to the country's petroleum industry.

W. Herbert Hunt, Petro-Hunt. Hunt has previously won AAPG's Pioneer Award and was instrumental in the Institute for the Study of Earth and Man, which strives to explore an interdisciplinary approach to energy issues and advocates the use of "clean" coal and nuclear technology as a solution to dependence on foreign oil.

Hunt

Hunt also has been on the Council of National Policy Board of Governors; president of Hunt Energy Corp.; and a management adviser, Petro-Hunt LLC.

Dudley J. Hughes, president, Hughes Oil, and this year's winner of the AAPG Outstanding Explorer Award, presented for distinguished and outstanding achievement in exploration for petroleum or mineral resources.

Additionally, he has written four books: *Wall of Fire: A Diary of the Third Korean Winter Campaign*; *Oil in the Deep South: A History of the Oil Business in Mississippi, Alabama, and Florida, 1859-1945*; *Wall of Fire: A Diary of the Third Korean Winter Campaign*; and *Studies of Earth's Atmosphere and Geology Beneath the Seafloor*.

Hughes

See related story, page 42.

Clayton Williams, Clayton Williams Energy.

The "well-known" Texas A&M Aggie, Williams is CEO and a director of CWEI, having served in such capacities since September 1991.

Williams

Williams or his affiliates have been involved in the discovery and/or development of oil and gas fields in Texas, New Mexico and the southeastern United States, as well as a broad spectrum of other business enterprises, including gas pipeline operations, ranching, real estate development and management, banking and telecommunications.

He has compared working in the industry to being in "the heights of glory … or the depths of hell."

– BARRY FRIEDMAN

Realities

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'… A Ways to Go'

Committee Chair Priscilla Grew said plans and proposals already have been made for climate change sessions at the 2009 AAPG Annual Convention in Denver.

"There's been a lot of interest in the sequestration issue," she said. "The committee is dealing with scientific issues related to climate change, but we also want to address topics of interest to the membership."

Among possible areas of examination, Barron said he would like to see a session on the realities of modeling climate and climate change.

"I think there's a lot of mystery to climate models, and there doesn't have to be," he observed.

Barron seems to feel scientists have not done a good job in explaining their climate studies work, or in communicating the current state of knowledge about climate change.

"We spend a lot of time in public looking like we don't know what's happening," he noted.

An assessment of climate science reveals both good work being completed and much work left to be done.

"It does tell you we have a ways to go. And in particular, we have a long way to go in understanding how serious the impact will be," Barron said, and added:

"You can't have this many people on the planet without having an impact." ❑

Exploration an art, with lots of science

It Takes a Team to 'Wildcat'

By LOUISE S. DURHAM
EXPLORER Correspondent

No one would argue that the late Michel Halbouty was a wildcatter in the truest sense of the word. Not only did he discover and produce sizeable volumes of hydrocarbons, he admittedly was never one to hesitate to "bet the farm" when necessary if he believed in a prospect.

It's only fitting that a program created in honor of this legendary oil finder is an ongoing special event at each annual AAPG confab.

When it comes to wildcatting, this year's Michel T. Halbouty lecture series presentation by Ray L. Hunt appears to be spot-on with current times given the title of his scheduled talk – "Distinguishing Successful Wildcatters: How Your Company Can Be Among the Best."


Hunt

The art/science of wildcatting has changed significantly since Halbouty's prime, and today it's more about the team rather than the individual, according to Hunt.

In line with that mode of thinking, this veteran oilman, who reigns as CEO of Hunt Oil Company and other related companies, will talk about what he considers to be the five characteristics that separate a truly great company from a good company:

✓ Corporate culture.
✓ Differentiation.
✓ Adaptability.
✓ Agility.
✓ Contrarian positioning.

"These principles apply not just to companies but also to universities, hospitals, churches, family life and oil companies," Hunt noted.

"Our company is an independent, and there are not a whole lot of independents still around," he said. "I think there's a very important role for independents to play in the industry of the future and the way the industry will change in the future – and it will change."

Hunt is big on potential opportunities in the domestic environment.

"Conventional wisdom is you need to go to places like Kazakhstan or Sakhalin to find major reserves of oil," he said, "but we're not ready to accept that.

"We think a lot of opportunities still exist in the Lower 48 and also international, so we're active in both," he said. "The Lower 48 is still very important to us, and it still receives a lot of focus and attention from us."

Team Work

When queried about today's oil finders versus the go-for-broke wildcatters of the past – such as Halbouty – Hunt's take on the subject is that the stereotypical wildcatter is history.

"Exploration is an art that happens to use a lot of scientific tools," he said.

"In the days of Halbouty and my father (H.L. Hunt), you could talk about a person being a wildcatter, and it would be a correct description.

"Today a person can't be a wildcatter because there are so many different disciplines and sciences involved," Hunt noted. "It may take someone who thinks in a creative way to make the ultimate decisions in an organization that will allow exploration to proceed.

"Today, I think a successful exploration company will have to acknowledge they have a team of explorationists," he said. "Each individual with different skills working together allows the organization to be successful.

"No one individual by themselves in today's world can enjoy significant success; it takes a team – and this was not necessarily true in the days of Halbouty or my father."

When asked whether the basic essence of wildcatting still has a place in today's generally risk-adverse industry, Hunt noted the resource plays that have developed do not carry the same components of wildcatting as he knew it when he entered the industry.

"If you define wildcatting as risk taking, you may risk a lot of money on a technology bet that could still be a resource play," he said.

"I think we'll see a lot of that in the future in response to the higher price regime that now exists in the industry." ❑

This year's Michel T. Halbouty Lecture, which focuses on wildcat exploration in any part of the world where major discoveries might contribute significantly to petroleum reserves, will be presented by veteran oilman Ray L. Hunt.

His talk, "Distinguishing Successful Wildcatters: How Your Company Can Be Among the Best," will be given at 5:10 p.m. Monday, April 21, in room 217 B/C of San Antonio's Henry B. Gonzalez Convention Center.


Gibbs


Eynon


Lewis


Lloyd


Mancini


Sonnenberg


Threet


Hughes


Avary


Goldstein


Peters


Gray


Pemberton


Lopatin


Veal


Embry

Awards set for opening session

34 Will Be Honored in San Antonio

By SUSIE MOORE
EXPLORER Staff Writer

The Association's top achievers, geoscientists and dedicated volunteers for the past year will be honored at the AAPG Annual Convention in San Antonio.

A total of 34 people will be honored this year, including two posthumously: Fred Meissner, this year's Sidney Powers Memorial Award winner, and John C. "Jack" Edwards, one of four Distinguished Service Award winners.

The awards ceremony is part of the meeting's opening session, which will begin at 4 p.m. Sunday, April 20, in the Lila Cockrell Theatre of the Henry B. Gonzalez Convention Center.

The session also will include:

✓ A pre-show, multi-media look at the geology, culture and current petroleum industry activity of San Antonio and the surrounding region.

✓ Welcoming remarks from General Chairman Gene L. Ames III.

✓ The presidential address from Will Green.

✓ A special AAPG Foundation announcement and presentation of the inaugural L. Austin Weeks Memorial Medal to Marta Weeks (see related story, page 66).

✓ A tribute to Meissner, presented by close friend and AAPG pas presidents M. Ray Thomasson Jr. and Marlan Downey, that will honor the geologist who learned of receiving AAPG's top award just weeks before his death. (See related story, next page.)

AAPG awards, approved by the Executive Committee, are presented annually to recognize individuals for service to the profession, the science, the Association and the public. Also being recognized will be three award winners from the House of Delegates.

Receiving this year's Michel T. Halbouty Outstanding Leadership Award – AAPG's second highest honor – is AAPG Honorary member and past president James Gibbs

See **Honorees**, page 34

Meissner, Edwards to be Honored Posthumously

Two AAPG honorees, including the winner of this year's highest Association award, will be honored posthumously during this year's opening session of the AAPG Annual Convention in San Antonio.

The two are **Fred F. Meissner**, the 2008 recipient of the Sidney Powers Memorial Award, and **John D. "Jack" Edwards**, honored with a 2008 Distinguished Service Award.

Meissner died at his home in the Denver area September 18, just weeks after being notified of receiving the highest honor given by the Association. He was 75. Edwards died Dec. 24 in Boulder, Colo. He was 82.

Fred Meissner

Meissner will be the second posthumous recipient of the Powers Award, the first being Meissner's friend and colleague, Norman H. Foster in 1999.

Meissner was a much-honored exploration geologist, college professor and consultant, and a pioneer of the concept that methane gas could be extracted from coalbeds. He authored over 45 publications, papers and poster sessions focusing primarily on hydrocarbon generation, migration and accumulation.

He was widely known for his technical acumen and his teaching ability.

Born and raised in Denver, his connection to the Rocky Mountains was cemented with his earning a geological engineering degree in 1953 and a master's at the Colorado School of Mines, Golden, Colo., in 1954, the year he joined AAPG.


Meissner

Following service with the U.S. Corps of Engineers in the Korean War, he began his professional career with Shell Oil Co., where for the next 17 years he worked with a number of leading petroleum explorationists and, notably, with M. King Hubbert, acknowledged by Meissner as his mentor.

As Meissner's reputation as a scientist grew his assignments became diverse and his undertakings included teaching in-house courses at the lab and at international offices.

Meissner joined Trend Exploration in Denver in 1973, which was formed by AAPG member Tom Jordan and included Norm Foster on the management team. There, Meissner worked on a number of important discoveries, including the giant Irian Jaya field in Indonesia.

He then worked with Trend's successor company, Filon Exploration, and later with Webb Resources and Bird Oil. In all the affiliations, he was a principle with titles ranging from exploration manager to vice president.

In 1978 he gave a landmark paper at the Montana Geological Society's Williston Basin Symposium, which incorporated the concept that source rock may be a frequently overlooked reservoir rock and that the change in phase from solid organic matter to a liquid during hydrocarbon generation causes abnormally high pressure in source rocks – and this is a primary and significant cause of fracturing in both source and adjacent reservoir rocks.

From 1986 to 2004, he was an adjunct professor at his alma mater, where he sat on thesis committees, taught a graduate course in advanced petroleum geology and was a guest lecturer.

In 1991 he began his consultancy where he worked basins worldwide as well as teaching short courses, including for the Rocky Mountain Section of the Petroleum Technology Transfer Council.

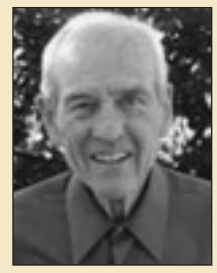
Meissner's AAPG activities includes serving as an associate editor from 1981-83 and 1985-87, serving on the Education, Convention and Publications committees and as a Distinguished Lecturer in 1980-81.

Meisssner won the EMD Best Paper Award in 1984, and received AAPG Honorary membership in 2001 and the Grover Murray Memorial Distinguished Educator Award in 2005.

Despite being weakened by his battle with esophageal cancer, on Sept. 1 – about two weeks prior to his death – Meissner led a field trip for about 30 members of the geology study group to which he belonged, "Geology and Mining History Along a Portion of the Mineral Belt Trail, Leadville, Colorado."

Jack Edwards

John D. "Jack" Edwards was an international geologist, educator and secretary-treasurer of the AAPG Foundation Trustee Associates.


Edwards

He was with Shell Oil for much of his career (1949-87), serving as chief geologist and being credited with the discovery of the then largest oil field in Brazil. After retirement he served as adjunct professor at the University of Colorado in Boulder and at Fort Lewis College in Durango, Colo.

He was considered an expert on future energy needs and concerns, and in 2002 testified before the U.S. Senate about strategies for future energy concerns.

Edwards was active in AAPG activities in a variety of areas in addition to his role with the Trustee Associates, including chairmanship of the Committee on the Future of Earth Scientists, several terms in the House of Delegates and, in 1989-90, as an AAPG Distinguished Lecturer. ❑


Ratcliff


Brown


Davies


Smith


Harris


Weber


Escalona


Farmer


Guzman


Sloan


Wu


Sun


Priest


Brooks


DeGood


Mallick

Honorees

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(see related story, page 36).

Full biographies and citations of all award winners will be included in a future BULLETIN.

Those award winners approved by the Executive Committee and who will be honored in San Antonio are:

Michel T. Halbouty Outstanding Leadership Award

Presented for exceptional leadership demonstrated and extraordinary service to the petroleum geosciences and the Association.

❒ **James A. Gibbs**, Five Star Energy, Dallas.

Honorary Member Award

Presented to members who have distinguished themselves by their accomplishments and through their service to the profession of petroleum geology and to AAPG.

❒ **George Eynon**, Canadian Energy Research Institute, Calgary, Canada.

❒ **Donald W. Lewis**, consultant, Lafayette, Calif.

❒ **Peter M. Lloyd**, Heriot Watt University, Falicon, France.

❒ **Ernest A. Mancini**, University of Alabama, Tuscaloosa, Ala.

❒ **Stephen A. Sonnenberg**, Sonnenberg Associates, Golden, Colo.

❒ **Jack C. Threet**, independent, Houston.

Outstanding Explorer Award

Presented to members in recognition of distinguished and outstanding achievement in exploration for petroleum or mineral resources, with an intended emphasis on recent discovery.

❒ **Dudley J. Hughes**, Hughes Oil Inc., Flowood, Miss. (See related story, page 42.)

Distinguished Service Award

Presented to those who have distinguished themselves in singular and beneficial long-term service to AAPG.

❒ **Katharine Lee Avary**, West Virginia Geological and Economic Survey, Morgantown, W.V.

❒ **John "Jack" D. Edwards**, University of Colorado, Boulder, Colo.

❒ **Barry A. Goldstein**, PIRSA, Adelaide, Australia.

❒ **Douglas C. Peters**, Peters Geosciences, Golden, Colo.

See **Awards**, page 38

Halbouty Award recipient

Gibbs a Leader Among Leaders

By LOUISE S. DURHAM
EXPLORER Correspondent

Professional societies in general depend heavily on the volunteer efforts of their members to implement the goals of the organization.

Despite the good intentions of all involved, there's always a need for various individuals to assume positions of leadership to guide the array of volunteers to work cohesively and effectively to attain the objectives of the various committees, projects and more.

Independent geologist James A. Gibbs – secretary for the AAPG Foundation Trustees, past AAPG president and an AAPG Honorary Member – is an individual who wears the mantle of leadership quite comfortably.

In recognition of his skills as a leader, Gibbs was chosen to receive this year's Michel T. Halbouty Outstanding Leadership Award. The award honors individuals who have provided excellence in Association leadership.

In addition to AAPG, Gibbs' active participation in other professional geoscience organizations has resulted in myriad awards, including honorary membership in the Dallas Geological Society and SIPES. The AGI selected Gibbs to receive the William B. Heroy Outstanding Service Award in 1994.

Gibbs, who serves as chairman of Five States Energy – which he founded in 1984 – is a third generation prospector-geologist who hails from Wichita Falls, Texas.

"I grew up in a very active petroleum community," Gibbs said, "and from my earliest days, Dad took me with him when he went to watch wells around Wichita Falls.

"Drilling a well was always like opening a Christmas package," he said. "You don't know what you have until you get down to the bottom.

"I've always been fascinated with being at a well site when we reached TD and saw the log and found out if it was a success or not."

Helping Hands

Years after his early indoctrination into the oil patch, Gibbs found himself contemplating where he wished to attend college.

"Dad went to Oklahoma University, and he said I could go anywhere, but if I went to Oklahoma he would help me," he said. "So that was exactly where I wanted to go."

Following completion of his undergraduate work, Gibbs served two years in the U.S. Naval Reserves as a lieutenant and communications officer aboard the carrier *USS Intrepid*. He later returned to OU where he received a master's degree in geology.

Gibbs' thoughts on the qualities entailed in leadership ability are straightforward.

"Enthusiasm is the most important thing," he said. "If someone is really interested in something, they'll find ways to participate in it, and if they have enough desire and interest in it, somehow they become a leader.

"Few things are done by an individual alone," Gibbs noted. "It involves bringing in other people and enlisting their help and trying to get them enthusiastic about the same idea or the same goal."

Gibbs

When queried about any one accomplishment that brings him the most pride, Gibbs emphasized it has more to do with the profession than his own career.

"I'm always interested in seeing people able to succeed at what they do," he said. "I'm fortunate in that I've been happy in what I've been doing, so I'm able to talk to people about finding a track for their own careers.

"Working with students or young people or geologists who are seeking a career change or seeking to enhance their career in some way and trying to help them think through that decision and find something they become passionate about and then succeed in are things I'm most interested in," Gibbs said.

One of Gibbs' contributions to the Association and profession includes the publishing of "Finding Work As a Petroleum Geologist: Hints for the Jobseeker," which he voluntarily wrote in 1985 at the beginning of a depression in the industry. The booklet has been kept current and is still available on the AAPG Web site.

"Working with others and students to help them find a career in the geosciences or find their niche in business is the thing I get the most satisfaction about."

Spreading the Word

Over the course of Gibbs' 50-plus years of membership in AAPG, he has served on a host of the organization's councils and committees, chairing several of these.

In fact, his interest in assisting and encouraging students is evidenced by his 10-year stint as a member of the AAPG Visiting Geologists Program, which entailed speaking to students at various universities about employment opportunities in the geosciences both within and outside the petroleum industry.

Gibbs' enthusiasm for the profession no doubt has inspired innumerable students.

"To me, geology – and petroleum geology especially – has always offered excitement because, for one thing, there's instant gratification," he said. "You know if your logic and experience and what you're doing is successful or not, and there's an immediacy to the work that I have found exciting.

"I also think the field is broad enough, there are a lot of avenues of pursuit in it," he added. "It's a very broad area in which to play, with fewer boundaries on it than in a lot of fields you see people working in.

"It's a challenging field, one in which people can find ways to get a lot of satisfaction." ❑

Awards

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Grover E. Murray Distinguished Educator Award

Presented for distinguished and outstanding contributions to geological education, both at the university level and toward education of the general public.

❒ **Robert S. Gray**, Santa Barbara City College, Santa Barbara, Calif.

❒ **S. George Pemberton**, University of Alberta, Edmonton, Canada.

Special Award

Presented to individuals and organizations whose area of work may not qualify for one of the existing awards, but is worthy of Association recognition.

❒ **Nikolai V. Lopatin**, Geosystem Institute, Moscow, Russia.

❒ **Steven L. Veal**, AAPG Europe Office, London, England, and DCX Resources.

Public Service Award

Presented to recognize contributions of AAPG members to public affairs – and intended to encourage such activities.

❒ **Ashton F. Embry**, Institute of Sedimentary Petroleum Geology, Calgary, Canada (see related story, page 46).

❒ **Douglas C. Ratcliff**, Jackson School of Geosciences, Austin, Texas.

Pioneer Award

Presented to long-standing members who have contributed to the Association and who have made meaningful contributions to the science of geology.

❒ **Leonard Frank Brown Jr.**, Bureau of Economic Geology, Austin, Texas.

Wallace E. Pratt Memorial Award

Presented to honor and reward the author(s) of the best AAPG BULLETIN article published each calendar year.

❒ **Graham R. Davies** and **Langhorne B. Smith Jr.**, for "Structurally-Controlled Carbonate Diagenesis: Creation of Hydrothermal Dolomite and Leached Limestone Reservoirs," which appeared in the November 2006 BULLETIN. Davies is with GDGC, Calgary, Canada, and Smith is with New York State Museum, Albany, N.Y.

Robert H. Dott Sr. Memorial Award

Presented to honor and reward the author/editor of the best special publication dealing with geology published by the Association.

❒ **P.M. "Mitch" Harris** and **L.J. "Jim" Weber**, for AAPG Memoir 88, *Giant Hydrocarbon Reservoirs of the World: From Rocks to Reservoir Characterization and Modeling*. Harris is with Chevron Energy Technology, San Ramon, Calif., and Weber is with ExxonMobil, The Woodlands, Texas.

J.C. "Cam" Sproule Memorial Award

Presented to recognize and reward younger authors of papers applicable to petroleum geology.

❒ **Alejandro Escalona**, for the paper "Petrophysical and Seismic Properties of Lower Eocene Clastic Rocks in the Central Maracaibo Basin." Escalona is with the University of Stavanger, Tananger, Norway.

George C. Matson Award

Presented to honor and reward the best oral presentation at the AAPG Annual Convention in Long Beach, Calif.

❒ **Cathy L. Farmer**, for the paper "Structural and Sedimentological Evolution of the Ultra-Deep Gas Play Fairway – Gulf of Mexico Shelf, Texas and Louisiana."

Her co-authors are **Debra H. Phillips, R.H. Benthien, D.V. Dailey, B.W. Horn, D.G. Derbecker** and **K.L. Hargrove**. All are with BP America, Houston.

Jules Braunstein Memorial Award

Presented to honor and reward the best poster presentation at the AAPG Annual Convention in Houston.

❒ **Jose I. Guzman, Rod Sloan, Shengyu Wu** and **Shaoqing Sun**, for the poster "A Comprehensive Classification of Seals Based on Worldwide Subsurface Analogs." All are with C&C Reservoirs, Long Beach, Calif.

Geosciences in the Media Award

Presented for notable journalistic achievement in any medium, which contributes to public understanding of geology, energy resources or the technology of oil and gas exploration. Granting of this award in any year is discretionary.

❒ **Tyler Priest**, chief historian for the Association of International Petroleum Negotiators history project and author most recently of *The Offshore Imperative: Shell Oil's Search for Petroleum in Postwar America*. Priest also is clinical professor and director of global studies, Bauer College of Business, University of Houston, Texas.

House of Delegates Distinguished Member Award

Presented to those who have distinguished themselves in singular and beneficial long-term service to the House of Delegates.

❒ **John R.V. Brooks**, Brookwood Petroleum Advisors, Brookwood, England.

❒ **Alan L. DeGood**, American Energies Corp., Goddard, Kan.

❒ **Jeannie Fisher Mallick** , prospect generator for Milagro Exploration, Houston. ❒

Cape Town Program Nears Completion

Organizers for this year's AAPG International Convention and Exhibition (ICE) are putting the final touches on the technical program.

More than 600 abstracts were received for this year's conference, which will be held Oct. 26-29 in Cape Town, South Africa.

This year's theme is "African Energy – Global Impact."

Planners expect the technical program to have more than 70 sessions built around five main themes, plus 16 short courses, eight field trips and several special forums.

Pre-registration is set to open in mid-May. For more information go online to www.aapg.org/capetown/.

65 fields credited to Hughes – that's right: 65

Geology Drives Explorer's Success

By DAVID BROWN
EXPLORER Correspondent

Is geology hereditary?

It could be for Dudley J. Hughes of Jackson, Miss., this year's AAPG Outstanding Explorer.

Hughes and his twin brother, Dan, both earned degrees at Texas A&M University and built highly successful careers in exploration geology.

"My brother is down in South America right now and he's doing very well," Hughes noted.

He also has younger twin sisters, Jane and June, who received degrees from the University of Oklahoma and went on to their own careers in geology.

"We liked it so much, they were inspired by us," he said.

Hughes, 78, has shown an almost genetic ability to pursue oil and gas plays during the past 50 years. Working primarily in Mississippi and Alabama, he developed concepts that opened 65 new fields.

That's right: Sixty-five.

His insights enabled discoveries in the Lower Cretaceous and the Upper Jurassic Smackover that have produced more than 200 million barrels of oil to date.

That's 200 million.

And his work led him to develop or participate in wells that have produced more than a trillion cubic feet of gas, including a major find in Canada and exploration in Australia.

You get the picture.

Hughes will be available to discuss his play concepts when he receives the Oustanding Explorer Award at AAPG's Annual Convention and Exhibition in San Antonio.


Hughes

> "What you're looking for is something that's big enough to be worthwhile. Then you look for parallels to what has worked before."

Among his many honors are outstanding wildcatter awards from the Mid-Continent Oil & Gas Association and the All American Wildcatters, lifetime achievement recognition from the Alabama Oil & Gas Board, induction into the Mississippi Business Hall of Fame and a Distinguished Achievement Medal from Texas A&M.

Much of Hughes' work involves salt-influenced structures in an area extending from eastern Louisiana to the Florida Panhandle, including the Mississippi Interior Salt Basin.

As a perpetual student of local geology, he draws on both mapping and a fundamental understanding of exploration settings.

"I do a lot of subsurface – I never relied a lot on seismograph," Hughes explained.

"I'd go through the old fields and map them horizon by horizon," he said, "and try to figure out why some of them weren't trapping."

Getting Started

Hughes grew up near Palestine, Texas, and graduated from high school there before receiving his geology degree from Texas A&M in 1951.

Hired by Union Producing Co. as a field geologist and scout, Hughes was almost immediately called up for active duty by the military.

He served as a first lieutenant in the U.S. Army artillery in the Korean War. His book about that experience, *The Wall of Fire: A Diary of the Third Korean Winter Campaign*, was published in 2003.

After returning to the United States, Hughes rejoined Union Producing, and the company assigned him to an active exploration area in Mississippi.

That proved a fateful posting.

"I came over here in 1953, as soon as I got out of the Army. I've been here my whole career. It's just a good place to live," he said.

At the time, local operators had branched into a series of successful, fairly shallow discoveries in the Upper Cretaceous.

"I came to Mississipi when it had lots of shallow production," Hughes recalled.

The play then turned to deeper prospects, attempting to push the same concepts into the Lower Cretaceous. Union Producing had a good discovery, finding multiple oil pay zones down to about 12,000 feet.

By this time, Hughes and his brother had formed a partnership to hold a producing lease. They later started a company, Hughes & Hughes, for independent operations.

"After a few years we opened our own business," he said, "and have been kind of hopping on from there."

In 1960, the Gulf Coast Association of Geological Societies awarded him its Best Paper award for his work on faulting associated with deep-seated salt structures.

AAPG tapped Hughes as a Distinguished Lecturer the next year.

In Mississippi, his theories were put to the test.

"Everybody was trying to play the Lower Cretaceous the same way (as the Upper Cretaceous discoveries), and it wasn't working," he said. "We decided to

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drill in the grabens."

Hughes' concept of drilling in grabens where anticline closures developed between faults broke open the lower play. The 1961 Summerland Field find led to the discovery of eight more Lower Cretaceous oil and gas fields in Mississippi.

'Bama Bound – And Beyond

But his pioneering work to develop Smackover oil plays in Alabama might be even more impressive. Hughes said he didn't really go looking for the oil – at first.

"I was acting as a consultant on a well where they had this shallower Utah (formation) production, and they wanted to drill deeper," Hughes recalled. "Danged if they didn't hit Smackover."

Once again, Hughes found an advantage in knowing what didn't work, as many other operators missed the Smackover pools.

"The big play started off with everybody drilling the deep-seated structures. As it happens, the Smackover actually opens up like a drawbridge," Hughes said.

"The best Smackover structures are not even reflected in the shallower beds. Out of all the big structures there was only a puddle of oil found in the deeper structures," he added.

Using his knowledge of local faulting and salt movement, Hughes mapped potential plays extending into Alabama. His analysis led him to propose a well between two dry holes, about a mile apart, in Choctaw County, Alabama.

The resulting Choctaw Ridge field Smackover discovery produced 900 barrels per day of 40-degree gravity oil in testing – the state's first major Smackover well.

"Once we got that idea," he said, "we were able to find about 10 fields over in Alabama."

In the late 1960s, Hughes and his brother traveled to Calgary to review an Alberta gas prospect. After checking the geology, they decided to buy a working interest in the exploration well for their company.

That well discovered the Dunvegan gas field, one of Canada's largest, which has produced over a trillion cubic feet of gas.

"Of course, gas wasn't worth a lot then," Hughes noted.

Ten years later, another exploration opportunity took the brothers to western Australia. The Dungarra Field, Perth's principal source of natural gas, had gone into decline.

"They had some gas lines that were running out of gas, and so we thought if we found something we would have a good market for it," Hughes said.

"We didn't find any major gas but we were kind of able to save the day," he added.

An Australian company had acquired drilling licenses along the existing pipeline. Dudley and Dan Hughes joined the project to develop gas prospects.

Working from seismic data this time, they mapped a 10-mile wide anticlinal mound in the area. Drilling to 7,000 feet discovered the Woodada gas field – a Permian, fractured, carbonate reef play.

Think Big

Back home, Hughes continued his string of good work and good fortune into the 21st century.

"In the last three or four years there's been one pretty good field found down here, but it was out of the salt basin," he said.

Hunt Oil Co. had drilled a Smackover discovery in the Little Cedar Creek Field in Conecuh County, Alabama, but it produced only about 30 barrels/day.

Still, it was Smackover, and Hughes had a look at the play area when another operator took over the production. He decided to buy the interests of investors who were dropping out of the development project.

An attempt to extend production turned out to be a dry hole. Hughes was able to acquire the interests of other investors – and as it happens, he said, became the largest interest holder in the string of highly productive wells that followed.

"Now we've drilled 43 wells on 160-acre spacing there," he said.

While no official estimate of oil reserves exists yet, "I'm going to say it's at least 30 million barrels," Hughes commented.

Ask him for advice to young petroleum geologists, and Hughes has the same counsel as so many other successful explorers: You've got to think big to be big.

"What you're looking for is something that's big enough to be worthwhile. Then you look for parallels to what has worked before," he said.

Today, from his Hughes South company in Flowood, Miss., he's developing Smackover stratigraphic play concepts to continue the exploration work.

Hughes, who might carry geology in his genes, wouldn't have it any other way.

"I think it's the most exciting business in the world." he said. ❑

Manpower, environmental challenges

'King Coal' Facing Major Hurdles

By KEN MILAM
EXPLORER Correspondent

The future of coal remains bright, except for one "dark" shadow on the horizon, according to Robert Finkelman.

The United States has enough coal to last at least another half-century, and technology tidily handles almost all of the many environmental and safety concerns, Finkelman said.

The one resource in short supply is on the human side, said Finkelman, a professor at the University of Texas at Dallas and an acknowledged expert in the field.

Finkelman

"The coal science community still has a very important role to play," he said. "Don't concede the issues to engineers, politicians and others."

But …

"There is no substantial flow of students into this area," he said.

In his upcoming address at the AAPG Energy Minerals Division luncheon in San Antonio, Finkelman will pose the question: "Will Coal Burn Brightly in the Future?"

Some of his talk will draw on the conclusions of a National Research Council committee report on the subject. Finkelman served on the committee, whose members spent over a year interviewing experts, visiting sites and reviewing data to determine whether the United States is prepared to meet the demands of energy from coal until 2030.

"We looked at every facet ... from reserves through electrical transmission," he said.

"There is no question we have the resources and infrastructure in place, probably to serve for the next 50 years, maybe the next 100 years," he said. "After that, the crystal ball gets a little cloudy."

Robert B. Finkelman, one of the country's leading experts on coal and the coal industry, will discuss the topic and related issues in a luncheon address to the Energy Minerals Division in San Antonio.

Finkelman's talk is "Will Coal Burn Brightly in the Future?"

The EMD luncheon will be held from 11:30 a.m.-1 p.m. Wednesday, April 23.

The Big Gorilla

A long list of issues arises in any discussion of coal's future – carbon dioxide, mercury, ozone, arsenic, sulfur, acid rain, particulates, acid mine drainage, black lung, nitrogen, radiation, byproduct disposal, resource availability and decreasing quality.

The NRC committee "acknowledged that carbon dioxide sequestration ... is the 800-pound gorilla in the room," he said. "(But) the consequences may be lower than we thought."

As for other environmental and safety challenges, Finkelman believes "the technology is in place, or will be shortly" to handle them.

"The exception is carbon dioxide," he continued. "We understand issues of the other concerns and can address them."

The idea of creating a separate government agency to consolidate coal research and regulatory functions "drew a strong, negative response from us," Finkelman said, "but we agreed that we do need more cooperation among existing agencies."

The panel also recommended additional funding for health and safety issues and more study to characterize coal reserves.

"We know where it is, but less about its composition," he said. "This would help the industry minimize environmental impacts and use coal more efficiently."

Although USGS studies indicate coal composition around the world is "very uniform," pollution is a bigger problem in developing nations – and doesn't stay within national borders.

"Some of what is spewing out in China is coming over to the United States and other countries," he said. "Would it behoove us to help improve the capabilities of other countries (to reduce pollution) rather than spend our money to squeeze out every last atom of mercury from our coal?"

A Lack of Attention?

In looking at future energy sources, Finkelman said that coal "is not getting the attention it deserves.

"We use coal to produce 50 percent of our electricity ... and demand is increasing," he said.

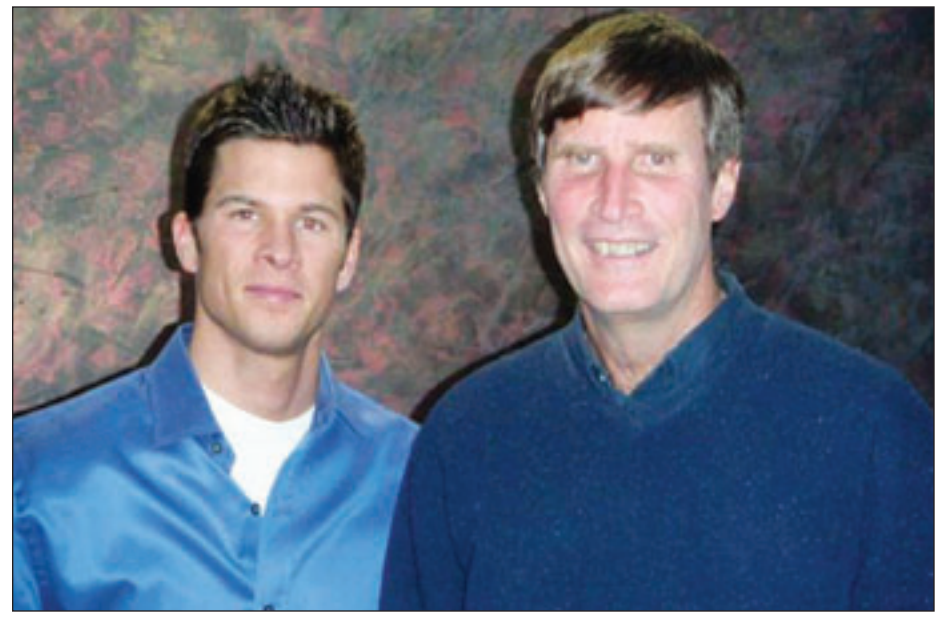
Compared to fuels like natural gas, "If you want the least expensive electricity then coal is the option.

"Coal-fired plants produce minor emissions, but require expensive capital investments," he said.

Gas is cleaner, but the question of reserves arises: How much natural gas do we have?

"As pressure for alternative fuels increases, there is some debate whether

See **Coal**, page 59



Matthew and his father, Ashton Embry, a 2008 AAPG Public Service Award honoree who believes there is a link between diet and the fight against multiple sclerosis.

MAKINGadifference

Science, Tenacity Causes Change

Helping his son means helping others

By BARRY FRIEDMAN
EXPLORER Correspondent

Imagine.

Your son, a healthy, robust teenager comes home from soccer practice one day and tells you he thinks he may have had a stroke.

Thinking of a bike crash he recently had, you tell him it's probably a pinched nerve and not to worry.

Then, inexplicably, he falls down a flight of stairs and complains of dizziness, so you take him to a doctor, who tells you that he has multiple sclerosis.

Like any father, upon hearing the news about his son Matthew, AAPG member Ashton Embry was shocked and saddened.

But Ashton Embry wasn't just any father; he also is a scientist.

Before the scientist took over, the father did what fathers do: he took his son to doctors and more doctors, insisted on more X-rays, MRIs, tests and consultations.

And then Embry, numb from a series of dark diagnoses and shrugged shoulders – and flabbergasted at the dispassionate resignation of physicians who said there was no cure – decided to think outside the medical, but not scientific, box.

And that's when he got angry.

Ashton F. Embry, a research scientist with the Institute of Sedimentary Geology and Petroleum Geology in Calgary, Canada and the recipient of this year's AAPG Public Service Award, said the situation was "unacceptable" – particularly when he discovered some promising leads as to the causes of MS.

"As a scientist, I was appalled at the lack of research in this field, given its great potential for helping persons with MS and that research into alternative causes for the disease."

"I was convinced that it was possible to narrow down the list of suspects to allow some reasonable therapies to be developed and tried," he said. "This is how it works in geology and petroleum exploration. You never know with certainty if petroleum is present at a given locality, but you can identify areas that have good potential and then you simply test them.

"You don't sit and do nothing because you are not certain."

> Ashton F. Embry will receive the AAPG Public Service Award April 20, during the opening session of the AAPG Annual Convention in San Antonio.
>
> Embry, an AAPG member since 1971, is being honored for his research into diet being a cause of multiple sclerosis.
>
> He is a research scientist with the Institute of Sedimentary Geology and Petroleum Geology in Calgary, Canada.

The Milky Way

And he didn't sit. Embry read everything he could find on MS, annoyed researchers, wrote to medical journals, visited clinicians, pestered government agencies and, eventually, painstakingly, came upon a possible cause – "a list of suspects" he called it.

"It became very clear that nutritional factors were very likely part of the story and that they were being ignored by the MS community," Embry said. "It was also clear that such bias was due to the lack of money that could be derived from a nutritional therapy. Everyone was only interested in finding a billion dollar drug" – a dynamic Embry found not only misplaced but infuriating.

"Money was trumping science and best interests of persons with MS," he said. "Even when faced with an abundance of data, no one was interested in a vitamin that sold for pennies."

According to Embry, vitamin D, along with a nutritional overhaul, may be an important link to MS.

Specifically, Embry believes a diet heavy in grains can worsen the vitamin D deficiency, as does one heavy in dairy

See **Embry**, page 48

Diet Imitates Stone Age Meal

According to Ashton Embry, the Paleolithic Diet advocates avoiding foods that can potentially activate myelin-sensitive cells (e.g. dairy) and promotes foods and supplements that suppress the autoimmune reactions (e.g. adequate vitamin D).

The diet, which was popularized in the 1970s, is one that humans ate for two million years and for which they are genetically compatible. Today, Embry says, our current diet consists mainly of food types added in the last 5,000-7,000 years.

Specifically, the diet recommends avoiding all dairy, gluten and legumes, because these foods contain proteins that can potentially activate and promote auto-aggressive immune cells.

Additionally, it suggests:

✓ Balancing the fat types so that saturated fats are 20-25 percent and polyunsaturated fats are 25 percent with an omega 6/omega 3 ratio below 3.

✓ To eat mainly fruits and vegetables for carbohydrates.

✓ To eat lean and organ meats, chicken and fish for protein.

The recommended supplements support immune regulation and control oxidation.

According to paleodiet.com, the following foods should be **consumed**:

✓ Meat, including organ meats (liver and kidney), chicken and fish.

✓ Eggs; fruit; vegetables (especially root vegetables, carrots, turnips, parsnips, rutabagas, but **not** potatoes or sweet potatoes).

✓ Nuts (walnuts, Brazil nuts, macadamia, almond but **not** peanuts or cashews)

✓ Berries (strawberries, blueberries, raspberries, etc.).

Foods that should be **avoided** include:

✓ Grains – including bread, pasta, noodles.

✓ Beans – including string beans, kidney beans, lentils.

✓ Peanuts, snow-peas and peas.

✓ Potatoes.

✓ Dairy products.

✓ Sugar.

✓ Salt.

– BARRY FRIEDMAN

Embry

from page 46

products, gluten and legumes.

It seems counterintuitive that milk, which has vitamin D, would be bad for MS, but Embry says "milk proteins yield antigens (protein fragments), which closely resemble self antigens in myelin (wraps around nerve cells in the CNS).

"Thus ingestion of milk can activate myelin-sensitive immune cells," he said, "and the destruction of myelin by such cells is what drives the MS disease process."

Of the diet (see adjoining story) Embry says, "I have little doubt if everyone had adequate vitamin D from birth onward MS would go the way of rickets."

And then he makes the following startling statement. "Cancer rates would also plummet."

A Tough Sell

It is a finding, Embry knows, that is a tough sell.

"I have always been a big picture geologist, which means I concentrate on the regional geology rather than on small, site specific projects," he said. "The identification of the main causal factors of MS required the same type of big picture thinking.

"The main problem of switching from rocks and fossils to T cells and cytokines was having to learn the language of molecular immunology and genetics," he said.

"This took quite awhile, but once I had the basics, the MS research became relatively easy and similar to geological research," he continued.

"The big difference between the two is that in geology I gather a lot of my own data and integrate it with the data of others," he said. "In MS, I am restricted to compiling the data of others and trying to synthesize so that new concepts become apparent."

Facing Obstacles

Unlike the geological community, however, whose support he says was uniformly encouraging, the majority of those in the world of MS "simply ignored my work."

The Calgary Chapter of the MS Society of Canada, for instance, while recognizing Embry's work, didn't embrace it. Carol Fredrek, director of client services, says, "We don't have all the information."

Others, like Dr. Luanne Metz, director of Calgary's MS Clinic for vitamin D, thinks the work is important but not relevant.

"I just don't think it's a huge factor," she states.

Embry, however, is neither surprised nor deterred.

"The frustrations of the work have mainly involved the fact that the clinicians totally ignore the science which ties nutritional factors to MS," he said. "They simply brush it off by saying there is no clinical trial data that proves that nutritional factors are part of MS. Thus they never tell their patients that there is a reasonable chance that nutritional factors are part of MS and that they have a great deal to gain and little to lose by giving them a try.

"This lack of common sense on the part of the medical community is potentially having a very adverse effect on the hundreds of thousands of people who have MS," he added.

Embry believes the lack of vision is due, in part, to the donations those fighting the disease receive from drug companies.

See **Public Service**, page 62

From hot rocks to frozen gas

An 'Unconventional Convention'

By LOUISE S. DURHAM
EXPLORER Correspondent

In keeping with the theme to "Deliver the Conventional: Pursue the Unconventional," this year's AAPG Annual Convention in San Antonio will offer ample opportunities to get up to speed on the latest happenings in the realm of unconventional resources.

In fact, an entire forum is dedicated to this topic.

The EMD-sponsored event – Future of Unconventional Resource Plays – will convene the afternoon of Tuesday, April 22.

"The main focus at the forum is to take an overview of the importance of what the unconventional resources have been and what they will be in the future, and discuss the technologies that will be used to help exploit these resources," said Andrew Scott, forum chair and past president of EMD.

"With unconventionals, the key is finding the key to unlock the lock that will let you exploit the resource," he said.

"With each resource, you have to find that one key trick to make it happen."

Scott

> "With each resource, you have to find that one key trick to make it happen."

Australia's Hot Rocks

It's commonplace these days to hear about coalbed methane, oil shales, gas shales, tight gas and such.

But there are other lower-profile unconventional resources, and they can tend to be somewhat exotic.

Look at hot rocks, for example.

Australia's hot rock and hydrothermal resources have the potential to fuel competitively-priced, emission free, renewable baseload power for centuries, according to AAPG member Barry Goldstein. His scheduled presentation at the forum, "Australia Hot Rocks – Glow With the Flow," will take a look at the status of these resources.

Goldstein, with the minerals and energy division of Department of Primary Industries and Resources of South Australia in Adelaide, noted that companies are targeting geothermal energy resources in Australia that fall into two categories:

✓ Hydrothermal resources in relatively hot sedimentary basins.

✓ Hot rocks.

If your prospecting milieu is confined to soft sediments – or mud, as some folks say – in areas like the U.S. Gulf Coast, hot rocks understandably are not on your radar screen. Hot rock systems are ordinarily associated with granites that contain extraordinarily high concentrations of naturally radioactive elements.

The radioactive decay of these elements over millions of years generates heat that becomes trapped when the granite is buried by insulating sediments, according to Geoscience Australia, which is the national agency for geoscience research and geospatial information.

Goldstein

The agency noted the hot rock system must be fractured to achieve fluid flow necessary for heat transfer. Liquid is pumped down an injection well and traverses the fracture network where it's heated by the rock prior to returning to the surface in a production well where its extreme heat is transferred to a secondary fluid.

'World's Largest Energy Resource'

Another intriguing yet untapped unconventional resource – gas hydrates – might be said to occupy a position in the unconventional resource spectrum that's a one-eighty from hot rocks.

Collett

The building blocks of a gas hydrate, which is a crystalline solid, consist of a gas molecule surrounded by a cage of water molecules, according to the U.S. Geological Survey. In fact, it looks much like water ice.

These gas hydrates occur naturally both in Arctic regions and marine sediments – and they hold enormous promise as an energy source

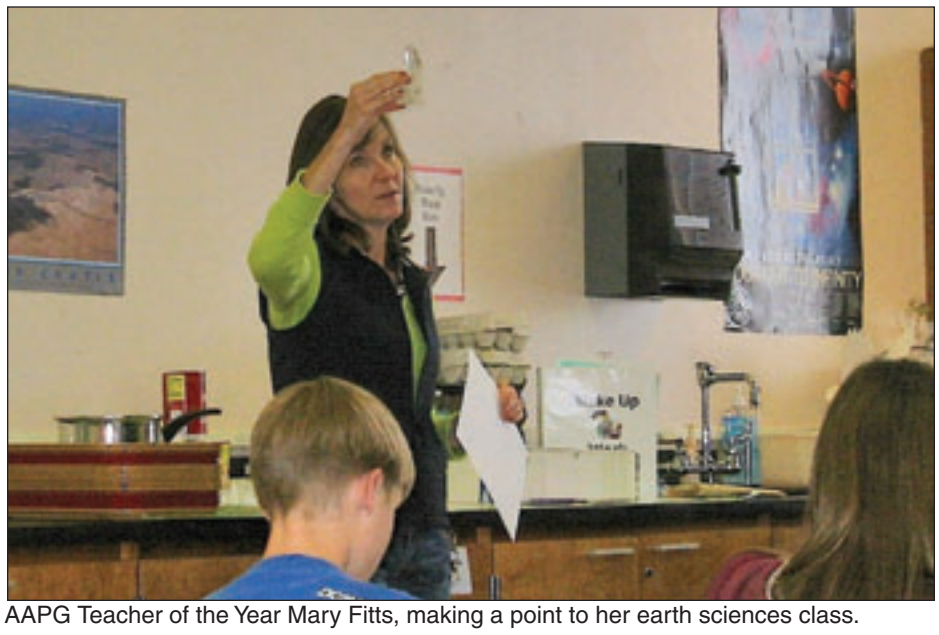
"The potential for gas hydrates worldwide has been stated to be equal to, if not greater than, the energy potential stored in all the known gas, oil and coal resources in the world," said member Tim Collett, who will talk about gas hydrates at the AAPG forum.

Collett's presentation is provocatively titled "Gas Hydrates: The World's Largest Energy Resource – But Should I Care!"

"That potential (of gas hydrates) is a strong statement," Collett said, "but the problem we have is that none of it's been produced yet.

"Basically the issue is how producible are gas hydrates themselves," he said, "and that is the focus of ongoing research. We have a large known amount of hydrocarbons within gas hydrates, but understanding how it would contribute to the energy mix is

See **Unconventional**, page 73



AAPG Teacher of the Year Mary Fitts, making a point to her earth sciences class.

Teaching what she loves

Teacher Believes In Inquiry Power

By SUSIE MOORE
EXPLORER Staff Writer

U.S. microbiologist Cornelius Bernardus Van Neil once said that science, "in essence … is a perpetual search for an intelligent and integrated comprehension of the world we live in."

That noted, the earth sciences may have found its latest modern day Van Neil in Mary Fitts.

Fitts, eighth grade earth sciences teacher at Sierra Middle School in Parker, Colo., is this year's AAPG Earth Science Teacher of the Year (TOTY) – chosen because of the effective and creative ways she encourages her students to investigate and comprehend their world.

"Inquiry is one way of learning that satisfies our students' natural curiosity," Fitts said. "It gives them the power of putting the puzzle pieces together themselves, rather than just being 'fed' information."

Fitts, who began her teaching career in 1982 and who was nominated by the Rocky Mountain Section, is the eleventh AAPG Teacher of the Year, a Foundation-funded award designed to honor "excellence in the teaching of natural resources in the earth sciences."

The national award of $5,000 will be split with $2,500 designated for educational use at Sierra Middle School under Fitts' supervision and the other half for her personal use.

She also receives an all-expense paid trip to the AAPG Annual Convention in San Antonio April 20-23 where she will be presented her award at the All-Convention Luncheon.

Fitts began her studies in the field of medicine at Rice University. After taking her first geology class, she said, that all changed.

"I had a couple of professors at Rice University, Dr. John Anderson and Dr. H.C. Clark, who were really good teachers," she said. "They both clearly conveyed their interest and passion for geology to all of their students."

She eventually earned a bachelor's degree in geology from Rice and worked as a soils geologist before choosing a teaching career.

"I worked as a geologist for a couple of years and had flirted with the idea of becoming a teacher in college," Fitts said. "I realized that what I wanted to do was teach kids what I loved – geology."

In the Classroom

Fitts, who has been a Colorado resident since 1984, is being honored largely because of her teaching philosophy, which encourages students to engage in inquiry-based scientific studies in the classroom and then apply the solutions to real world events.

Conceivably, Fitts' enthusiasm in teaching earth sciences may have started as a young girl. She laughed when revealing her bias for science classes – "with the exception of physics," she said – and to being "interested in rocks and minerals."

Today her passion for rocks continues, and Fitts confessed to using a portion of her TOTY money to buy "some good rock samples" to use in her classroom.

Fitts believes that being an earth sciences teacher is rewarding because "kids are naturally curious about their world, and love to learn about 'their earth' in a variety of ways.

A typical day in Fitts' classroom begins with a "daily Science Starter (the warm-up)," she said, "Then we play a vocabulary game called the Chain Game.

"The Chain Game changes with

See **TOTY**, page 69

SPOTLIGHTon...

Global Career Began With a Hike

Geologic, cultural environments varied

By SUSIE MOORE
EXPLORER Staff Writer

Emily Oatney knew as a teenager – a feeling affirmed by a hike in the mountains – that she wanted a career as a geologist.

What she didn't know was that her hike was just the first step toward a diverse international career.

The fact that it was, however, makes her smile – and more importantly, for the industry and the profession, it makes her valuable.

Oatney, exploration adviser for Chevron Europe, Eurasia and Middle East Exploration & Production Co. in London, and an AAPG member since 1998, is an example of how to succeed in the international arena. American educated, she's been living and working abroad for the past two years – and loving every minute of it.

From Oakland, Calif., in transition from an assignment in Vietnam and awaiting her next move to London, Oatney recently spoke candidly about her academic decision to go into the field of geology, her career with Chevron and some of the diverse cultural experiences she has encountered over the last 10 years.

"When I was in high school I took a field biology class," she said, "and as part of that class we went on a backpacking trip to Yosemite. I had been to Yosemite before, but I had a new appreciation for it from a scientific perspective.

Oatney, in Annot, France during a Chevron turbidite field school.

"I started to look at the mountains differently, and was really intrigued by how they got there," she said. "I don't think it was conscious at the time, because I didn't know that geology was a major or something that you could pursue as a field of study until I got to college."

Oatney began taking classes at the University of California (Santa Cruz) and was undecided in her field of study until she enrolled in a geology class. She admitted that the class description for earth science with its field trips and outside investigations – particularly structural geology – sounded exciting.

"I took a geology class and I declared my major that first week," she said. "I was completely taken by it."

A Passage to India

While working on her master's degree in geology at Oregon State University, Oatney lived and worked in India.

"I moved to India to do some geologic mapping and trenching in the Himalayan foothills," she said. "I was the only apparent foreigner in the town, and I lived as a local would.

See **Spotlight**, page 72

Diversity Changing the Environment

Emily Oatney, exploration adviser for Chevron Europe, Eurasia and Middle East Exploration & Production Co. in London, will be a speaker at the seminar "Embracing Diversity in a Global Workforce: How Do We Respond to Age, Gender and Global Cultural Differences?" which will be held Tuesday, April 22, 5:15-7 p.m., in Room 210.

The seminar will explore how issues involving age, gender, ethnicity and religion becoming a big part of the petroleum industry. Speakers will discuss contemporary workplace dynamics – and provide ideas for effectively dealing with the changing environment.

Other speakers are:

❒ **Tom Roberts**, assistant dean, Recruitment and Leadership Development, College of Engineering, Kansas State University, who will talk about generational perspectives and their impact on ethics and decision-making in the workplace.

❒ **Lee Allison**, state geologist and director of the Arizona Geological Survey, Tucson, who will explore two themes: "Diversify or Die" and "Diversity Is Not a Women's Issue."

Following the presentations will be time for questions/answers and informal discussion among the seminar participants.

The seminar is hosted by the AAPG Professional Women in Earth Sciences (PROWESS) Committee and the Association for Women Geoscientists. PROWESS members Susan Nissen and Sunday Shepherd will co-chair the event. ❒

GEOPHYSICALcorner

Finding the Value of 'Impossible'

(The Geophysical Corner is a regular column in the EXPLORER, edited by Bob A. Hardage, senior research scientist at the Bureau of Economic Geology, the University of Texas at Austin.)

By BOB HARDAGE

Two constraints can be imposed on the frequency behavior of a digital seismic wiggle trace:

✓ Each frequency component of the trace is a positive quantity.

Frequencies can have a negative algebraic sign in some mathematical operations, such as Fourier transforms, but when the oscillatory behavior of an actual wiggle trace is visually examined to estimate seismic frequency, the frequency estimate is always a positive number.

The situation is much like trying to dial a radio to a negative frequency to listen to music. Negative frequencies are just not a part of the real world.

✓ No frequency component can exceed the Nyquist limit f_N, which is defined as $f_N = 1/(2\Delta t)$, where Δt is the time sample interval of the digital data in units of seconds.

Because of these constraints, when an instantaneous frequency attribute is calculated along the time extent of a seismic trace, the frequency value should never be negative at any time coordinate, nor should the value ever exceed the Nyquist limit.

Instantaneous frequencies, however, always exhibit negative values and values greater than Nyquist at numerous locations throughout a 3-D seismic data volume.

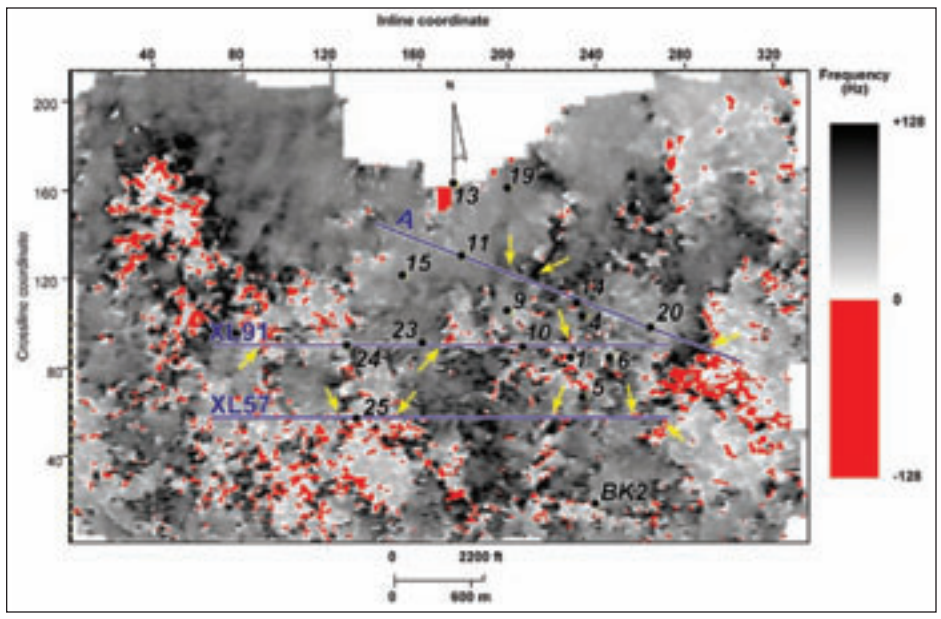


Figure 1 – Map of instantaneous frequency behavior across a thin-bed turbidite system. Negative frequencies (red) and frequencies greater than Nyquist (darkest black) are impossible frequency values but are commonly created by software that generates instantaneous seismic attributes. Arrows show where three arbitrary profiles intersect trends of impossible frequencies.

The term "**impossible frequencies**" is used in this article to refer to these anomalous frequency values that violate the constraints just stated.

* * *

Figure 1 shows an example of impossible frequencies occurring in a 3-D seismic volume; the surface being analyzed in this instance is a horizon that passes through the Brushy Canyon formation in an area of the Delaware Basin in New Mexico.

At this prospect area, the Brushy Canyon is a sequence of fine-grained siliciclastic units deposited in a deepwater turbidite environment. The color bar used to display the instantaneous frequency behavior was chosen to emphasize impossible frequencies, with all negative frequencies shown as bright red and all frequencies that equal or exceed the Nyquist limit (125 Hz in this case) shown as darkest black.

The arrows positioned along arbitrary lines A, XL91 and XL57 mark where each profile crosses a reasonably continuous trend of these impossible frequencies.

Vertical profiles along lines A and XL57 are displayed as figure 2 (opposite page) to illustrate the wavelet character that is associated with these impossible frequencies. The position of the attribute surface in figure 1 is 10 ms below the K horizon along these profiles.

The location of each anomalous-frequency arrow shown along the map horizon (figure 1) is indicated by a circle.

At each of these circled coordinates there is a reflection termination or some type of abrupt change in the waveform of the reflection wavelet. Interpreters working with these particular attribute displays concluded that most of these anomalous frequencies were marking stratigraphic pinch-outs or reservoir compartment boundaries.

If true, then "impossible frequencies" have great interpretational value.

* * *

Applying the assumption that, in this instance, impossible frequencies define boundaries of reservoir compartments, a tentative reservoir-compartment map such as that shown in figure 3 (opposite page) can be constructed.

The compartments on this map were

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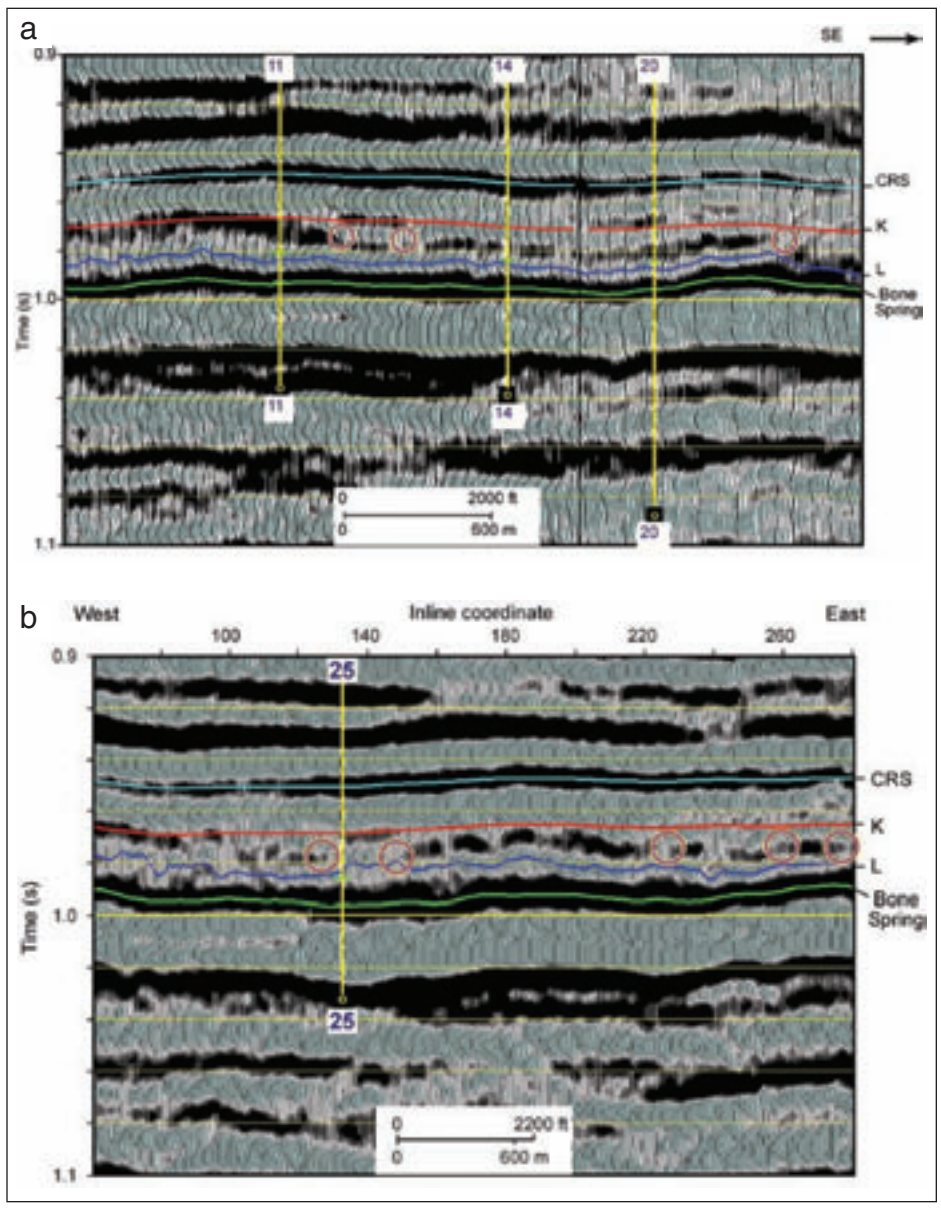

Figure 2 – Vertical seismic section along profiles (a) A and (b) XL57 (figure 1).The map in figure 1 is 10 ms below and conformable to horizon K. Circled locations show where the profile crosses a trend of impossible frequencies.

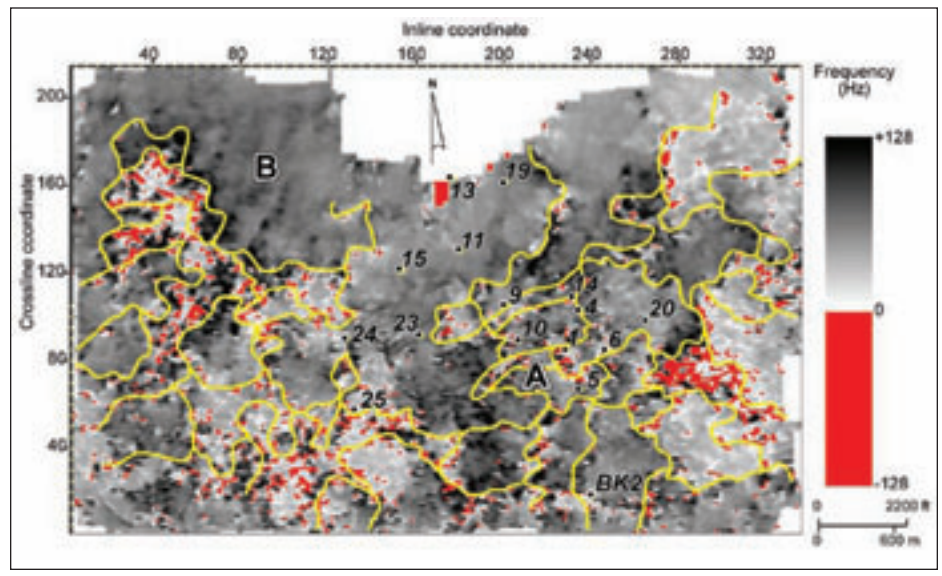

Figure 3 – Map of hypothetical reservoir compartment boundaries that follow trends of impossible frequencies. The map implies that area A has small reservoir compartments and area B is a large reservoir compartment.

continued from previous page

created by drawing boundaries along trends suggested by the alignments of the impossible frequencies. Each boundary defined by this "connect-the-dots" method is arbitrary; other interpreters would connect the dots in different ways and cause some compartments to have sizes and shapes that differ from those shown on this map.

Is the assumption that impossible frequencies define compartment boundaries valid in this case?

At this prospect, there is circumstantial evidence that the answer is "yes."

✓ Drilling has confirmed that wells in area A (figure 3) penetrate small reservoir compartments at this stratigraphic level – the same principle implied by the frequency-based map.

✓ A horizontal well drilled across area B has been the most prolific Brushy Canyon producer across a broad area of the basin, confirming that the well penetrated a large compartment, as indicated by the compartment map.

* * *

Will impossible frequencies be valuable indicators of stratigraphic terminations and/or compartment boundaries in other areas and in other depositional environments?

Always consider the possibility that they will.

Incidentally, some commercial interpretation software arbitrarily deletes the negative algebraic sign of any negative frequencies created by their algorithms, which may not be a desirable thing to do. Those negative frequencies can be important information. ❑

WASHINGTONwatch

Carbon Sequestration Rules Emerge

By DAVID CURTISS
GEO-DC Director

Just a few years ago uttering the words "carbon sequestration" at a party would result in raised eyebrows and puzzled looks: "Carbon what?"

Today, however, the term rolls smoothly off politicians' tongues: Al Gore gave it positive mention in his film "An Inconvenient Truth," and the Bush administration's energy strategy depends on it to harness the energy in the nation's vast coal resources while minimizing carbon emissions to the atmosphere.

A primary focus of the U.S. government's current research effort is the long-term storage of carbon in geologic formations, including depleted oil and gas reservoirs, unmineable coal seams and deep saline formations. President Bush's fiscal year 2009 budget request for carbon sequestration programs within the U.S. Department of Energy (DOE) is $149 million.

There are other methods of carbon sequestration: Increasing soil carbon content by changing crop tilling practices, for example, is currently in use with good results. Injecting CO_2 into the oceans is being studied, but faces both technological and public acceptance hurdles. Geologic sequestration provides the greatest hope for storing large volumes of CO_2 close to the point sources producing it.

However, geologic sequestration also faces technological challenges – after all, the current goal of DOE's Regional Carbon Sequestration Partnerships' (RCSP) large-scale, multi-year demonstrations is to inject in a single well up to one million tons of CO_2 annually.

That is roughly equivalent to the volume of the Empire State Building – and a commercial plant would emit several times this amount.

Talk about that at a party and eyebrows will really pop up. Even if we can solve the technical challenges, public acceptance remains an issue.

* * *

Fortunately, the petroleum industry's long experience of safely injecting CO_2 into the subsurface for enhanced oil recovery (EOR) is helping solve both the technological and public acceptance challenges facing geologic sequestration.

Recognizing this fact, the Interstate Oil and Gas Compact Commission (IOGCC) formed a "Geological CO_2 Sequestration Task Force" in 2002 to investigate the technical, policy and regulatory issues surrounding safe and effective geologic sequestration.

The Phase I study was funded by DOE through its National Energy Technology Laboratory. The task force included members from IOGCC member states and affiliates, state oil and gas regulators, DOE, the RCSPs, state geologists and other experts.

The principal result of Phase I was recognition that states that regulate oil and natural gas production and the subsurface storage of natural gas have both the requisite knowledge and experience to safely regulate geologic sequestration.

They also have regulatory frameworks in place that, with some modification, could apply to geologic sequestration.

In 2006 the task force resumed work on Phase II, again funded by DOE. Representatives of the U.S. Environmental Protection Agency, U.S. Bureau of Land Management and an environmental group joined the task force for this study.

Phase II's goal was to prepare a guidance document for states wanting to create a geologic sequestration regulatory framework. The report includes a model statute, model rules and regulations with explanatory text to implement the statute, and a report addressing legal questions on subsurface ownership and injection rights. The guidance document is available at the IOGCC Web site.

* * *

At the federal level the U.S. Environmental Protection Agency (EPA) also is reviewing the regulatory needs for carbon sequestration. Specifically, its focus is ensuring that injecting large volumes of CO_2 into the subsurface does

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Curtiss

David Curtiss will be a presenter in the DPA forum "Energy Resources, Reserves and the Future Workforce: Policy and Labor in the Geosciences" at the AAPG Annual Convention and Exhibition in San Antonio.

The session will be held from 8-11:30 a.m. Tuesday, April 22. (See related story, page 78.) Curtiss' topic will be the current initiatives in work force development in the geosciences.

Curtiss also will be available during the convention at the DPA booth located in the AAPG Center in the exhibits hall.

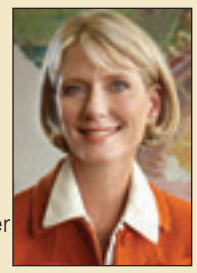
For more information on carbon sequestration-related reports and activity:

✓ Interstate Oil and Gas Compact Commission report, at http://www.iogcc.state.ok.us/pdfs/Road-to-a-Greener-Energy-Future.pdf.

✓ EPA overview of UIC program, and http://www.epa.gov/safewater/uic/index.html.

✓ EPA overview of carbon sequestration rule making, at http://www.epa.gov/safewater/uic/wells_sequestration.html.

TRC Member To Speak At Luncheon


Jones

Texas Railroad Commissioner Elizabeth Ames Jones, a former three-term member of the Texas House of Representatives, will be the speaker for the Division of Professional Affairs luncheon in San Antonio during the AAPG Annual Convention and Exhibition.

Jones will be talking on "Leading the New Energy Revolution."

The luncheon will be held from 11:30 a.m.-1 p.m. Tuesday, April 22.

Jones, immediate past chairman of the Texas Railroad Commission, was appointed commissioner by Gov. Rick Perry to fill a vacancy. In 2006 she was elected to a full six-year term. She serves as the Commission's representative to the Coastal Coordination Council.

During her tenure in the Texas legislature she was one of the state's three appointees to the Southern States Energy Board.

Jones' talk will offer her views, as a regulator and policymaker, on how people can make a positive contribution toward enhancing the country's energy security. ❑

Coal

from page 44

they are really more environmentally friendly than fossil fuels," Finkelman said. "Alternative fuels will not fill the gap."

Currently, 95 percent of mined coal is pulverized to make electricity, he said.

"We need to look more at gasifying and liquefying" coal for conversion to fuels and chemicals, he suggested.

Finkelman also said byproducts, like fly ash, might be used more effectively, perhaps including metals extraction, which would "in return … lower costs of production," he said.

Security and the Future

And then there's the issue of energy security, of which Finkelman commented, "The only resource completely under our control is coal."

While energy independence is not realistic, "taking over other countries for their oil is clearly not an option," he said. "And we have to acknowledge that at least some of the money sent to those countries ends up in the coffers of people who would like to do us harm.

"We will always have to import fuel, but we can constrain that," he said.

Returning to the issue of training future coal scientists, Finkelman said: "People like me, who have spent their lives in this field, are soon to be put out to pasture. There's no one to pass the torch to.

"AAPG and the EMD need to be cognizant of this issue and adopt policies to encourage students to get involved and to maintain our existing centers of excellence," he said.

"The most important question for the next 25 years is not where is the coal, but where are the people to mine it," he said.

As other fuel costs rise and availability becomes more complicated, is America poised for a return of King Coal?

"Some would say it never relinquished its crown," he said. ❐

continued from previous page

not damage drinking water sources.

The Safe Drinking Water Act places this responsibility with EPA, and is implemented through the Underground Injection Control (UIC) program. In many states the local regulatory bodies implement the UIC program on behalf of EPA. This is known as having "primacy."

In other states this responsibility is shared by state regulators and EPA, or handled exclusively by the federal agency.

The UIC program has several well classes with different regulations for each class:

✓ Class I – hazardous waste.
✓ Class II – oil and gas operations, including CO_2-based EOR and enhanced gas recovery, EGR.
✓ Class III – mining.
✓ Class IV (no longer used).
✓ Class V – experimental, non-hazardous.

In March 2007 EPA issued guidance to states with primacy to permit geologic sequestration demonstration projects as Class V experimental wells. This facilitated permitting for the RCSP demonstration projects.

Shortly thereafter EPA launched a formal rule-making process to regulate long-term geologic sequestration. The agency formed a working group consisting of EPA, DOE and state officials, and fast-tracked their activities. EPA expects to issue a rule proposal for public comment this summer.

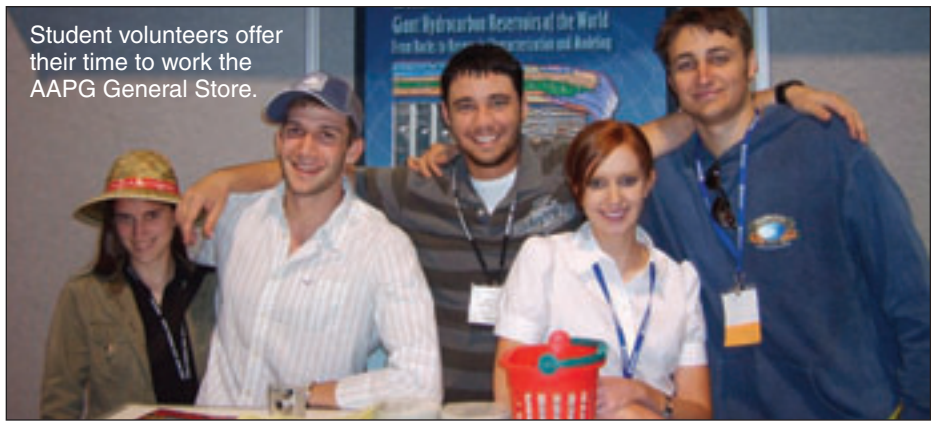
Even if we can solve the technical challenges, public acceptance of sequestration remains an issue.

It is important to note that the current EPA process has nothing to do with regulating carbon emissions – it's about how to safely store them. Assuming we can solve the technical and public acceptance challenges, the question of whether large-scale carbon sequestration becomes reality is something lawmakers must still decide.

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

Gear up in San Antonio

General Store Aids Students



Student volunteers offer their time to work the AAPG General Store.

By VICKI BEIGHLE
and MIKE MLYNEK

Want a way to do something nice for yourself that is at the same time something nice for others?

Make plans now to visit the AAPG General Store while attending the AAPG Annual Convention in San Antonio.

The AAPG Bookstore/General Store, located within the AAPG center in the exhibits hall, is filled with AAPG apparel that is both stylish and functional – designed for all ages, and available exclusively at the annual meetings.

But the best part is this: By purchasing AAPG apparel and gifts at the General Store you are supporting the Student Chapters whose members volunteer to work in the store during the convention (these chapters receive the majority of the proceeds).

Ten percent of the proceeds also are donated to the AAPG Foundation, in recognition of its ongoing support of students and the Student Chapter Programs within AAPG.

AAPG subsidizes much of the operational costs involved in the General Store, a program that has been offered for over 27 years, benefiting countless chapters and students.

It's a win-win relationship: Many universities that have received funds use these proceeds to attend the convention the following year – therefore putting the money directly back into AAPG – and for many universities this is their chapter's largest fund-raising opportunity.

Want More Reasons?

There are more good reasons to stop by the General Store:

✓ By buying your souvenir apparel at the General Store you are donating to a worthy cause *while* receiving a great looking shirt or merchandise for your generosity.

✓ This year for every $50 spent on merchandise (Bookstore and/or General Store – excluding dues) you will receive a chance to win a 2½-foot Pennzoil 1950's Stamped Steel Tokheim Gas Pump (which will be on display in the store, of course).

✓ The General Store is an excellent networking opportunity for the student member.

In fact, many students have received job offers while working in the store – so make sure you visit with the students while shopping.

Please come by – and buy. We'll be glad to help you find the right souvenir for yourself, family and co-workers. ❑

(Editor's note: Beighle is the AAPG Member Services Department manager, and Mlynek heads the Student programs.)

Hartman Award Honors Student Activity Support

Jim Hartman, the father of the Student Chapter Program, long ago recognized the importance of investing in students – for both the industry and AAPG.

He believed the store would be a dependable fundraiser, and by selling the merchandise at the annual meeting it would allow greater exposure and buying opportunity to more members.

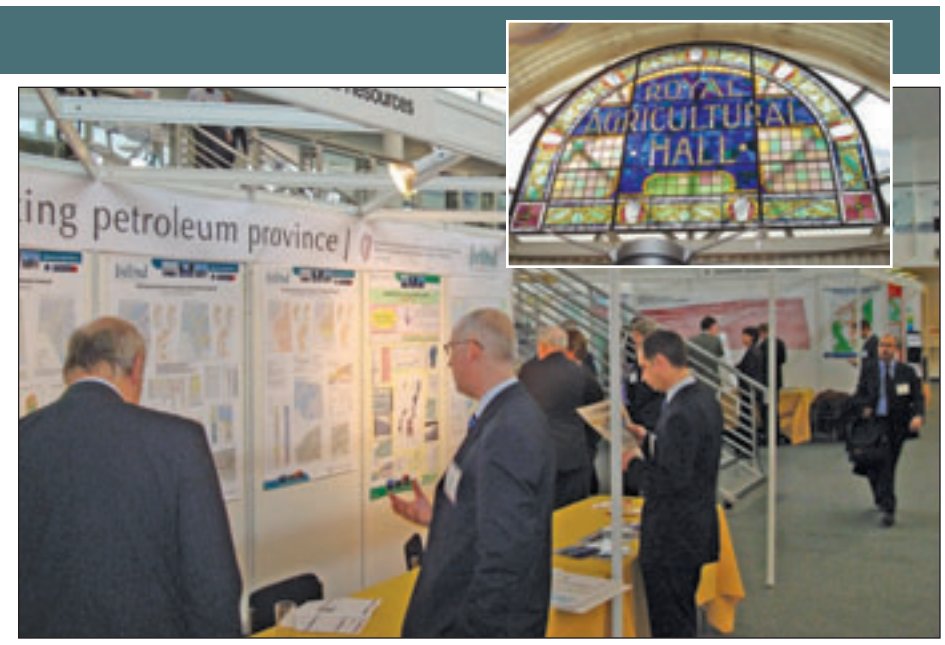
Hartman continues to support the Student Chapter Programs through financial donations (via AAPG Foundation) – and with regular shopping trips – and in 2006 AAPG created a new award in honor of him: the Jim Hartman Service to Students Award, honoring recipients for longtime support and dedication to AAPG student members.

Past recipients include Larell Nielson and Martha Lou Broussard.

This year's recipient will be announced during the Student Reception in San Antonio. ❑

REGIONS&sections

APPEX London Generates a Buzz



(Editor's note: Regions and Sections is a regular column in the EXPLORER offering news for and about AAPG's six international Regions and six domestic Sections. Contact: Carol McGowen, AAPG's Regions and Sections manager, at 1-918-560-9403; or e-mail to cmcgowen@aapg.org.)

By CAROL McGOWEN
Regions and Sections Manager

By all accounts the seventh annual APPEX – AAPG Prospect and Property Expo in London – held in early March was a significant success.

The Gallery Hall of North London's Design Centre at Islington was filled with over 400 delegates representing every continent, and the exhibition hall was full with some 47 booths – a 15 percent increase over 2007.

AAPG's unique brand event is unlike any event offered by any other organization; its focus is on business and networking versus an exclusively technical program.

"The essence of APPEX is its format," said APPEX chairman Mike Lakin, "providing one-on-one interaction among high-level decision makers and opportunities to give and see prospect presentations from around the world."

Senior industry decision makers from small independents to the majors – including CEOs, new ventures and exploration management – were represented. Major companies as well as regulatory bodies attend APPEX because it allows them to personally represent their companies while keeping a low profile.

This year's event offered a program of regional exploration company and national oil company (NOC) speakers, as well as prospect forums for exhibitors to present and sell their deals.

In addition, attendees benefited from a sold-out seminar on the "Management and Presentation of Farmouts," and the Finance Forum broadened the audience by attracting members of the financial community.

Exhibitors hailed from 17 countries and included the International Pavilion, bringing together NOCs, ministries and other governmental agencies responsible for the promotion of oil and gas exploration opportunities.

Interestingly, the Design Centre at Islington is the original site of London's old "Agricultural Hall," a landmark from the Victorian era built in 1862 for entertainment, shows, exhibitions and pageants. Today the venue is a modern convention center with nearby upscale hotel accommodations. While this year's APPEX was housed in the Design Centre's Gallery Hall, the success of 2008 bodes well for possible expansion in time into the main hall.

"APPEX is an excellent opportunity for networking by establishing formal and informal contacts while connecting different generations of experts and officials," said Istvan Berczi, AAPG's European Region president. "APPEX fully supports the strategy of the AAPG European Region by offering a unique event that allows AAPG to stay in close contact with the full range of the oil and gas industry players." ❑

APPEX 2008 Sponsors

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Tethys Oil AB
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Wavefield Inseis
Zebra Data Sciences

PROFESSIONALnewsbriefs

Michael A. Abrams, to manager-geochemistry, Apache E&P Technology, Houston. Previously manager-petroleum geochemistry and senior research scientist, University of Utah, Energy & Geoscience Institute, Salt Lake City.

Bruce A. Blake, to geophysical adviser, Repsol (Remsa), Tripoli, Libya. Previously senior geophysicist, Repsol, Madrid, Spain.

Michael F. Conlon, president and chief operating officer, Yuma Exploration and Production, Houston. Previously vice president-exploration, Yuma Exploration and Production, Houston.

Ian Cross, to managing director, Moyes and Co., Houston. Previously vice president-business intelligence, IHS Energy, Houston.

Paul Dore, regional manager-Gulf Coast, Murphy Exploration and Production, Houston. Previously chief geologist-international, Murphy Exploration and Production, Houston.

Gerald K. Greer, staff geologist, Kinder Morgan CO_2, Houston. Previously geologist, Carl E. Gungoll Exploration, Houston.

Craig M. Gumley, to managing director, Kairiki Energy, Subiaco, Australia. Previously exploration manager-offshore North Australia, Santos, Adelaide, Australia.

Pat Hagar, to advanced senior geophysicist-Central African business unit, Marathon Oil, Houston. Previously senior geophysical adviser, Oxy, Houston.

Josh Hickman, to division geologist, Cabot Oil and Gas, Charleston, W.Va. Previously geologist, CNX Gas Corp., Bluefield, W.Va.

Steve Leeds, to vice president-business development, Core Laboratories, Denver. Previously business development manager-Rocky Mountain region, Core Laboratories, Denver.

Ernest A. Mancini has been appointed chair of the Department of Geological Sciences at the University of Alabama in Tuscaloosa. Mancini, a past AAPG Elected Editor, is Distinguished Research Professor in Petroleum Geology and Stratigraphy, University of Alabama, Tuscaloosa.

Sara Potter Miller, operations geologist, EOG Resources, Corpus Christi, Texas. Previously geologist, American Shoreline, Corpus Christi, Texas.

Ian Norton, senior research fellow, Institute of Geophysics, University of Texas, Austin. Previously senior research associate, ExxonMobil Upstream Research, Houston.

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

Public Service

from page 48

"People expect the charities to act in the best interests of persons with MS, but this is clearly not happening. We would not have had to set up Direct-MS (www.direct-ms.org) if the main MS charities were doing what they were supposed to."

Telling the Story

There are some signs of hope, though.

A recent Harvard University medical review has five pages summarizing vitamin D research, including a finding that those who supplemented the vitamin in their treatment regiments lowered their risk of MS by 40 percent.

Embry says that at present, the research on the link between MS and nutrition, generally, and vitamin D deficiency, specifically, is ongoing, but work done on MS and overall nutrition (excluding vitamin D) in North America "is almost nil."

Embry, who still remembers the chilling effect of being told of his son's diagnosis (including one morbid observation from a physician who intimated that many MS patients buy cement boots), says the experience " … has made me a better scientist, and I have learned a lot about how to communicate scientific ideas and information to the public."

He is heartened, he says, by the letters he gets from the people who write to tell him how beneficial the nutritional therapy has been in their lives.

This, too.

Matthew Embry, recently married, now has no signs of MS. ❑

WWWupdate

Career Center's Service Expanded

AAPG has expanded its online employment resources, providing employers targeted access to geoscience professionals and AAPG members an opportunity to specify their areas of expertise and experience.

AAPG member services manager Vicki Beighle said the online AAPG Career Center expands the existing jobs posting board, allowing for a more closely tailored description of a potential hire or a consultant – and making a search for appropriate applicants more efficient.

The searchable "registry" of expertise and interests matches expertise and experience with the job requirements, targeting the candidates with the job criteria and matching with the employer who needs the applicant's knowledge and skills.

❒ For the **job seeker** – For job seeking AAPG members, the AAPG Career Center is a free service that provides access to employers seeking geoscientists.

With its focus on petroleum geologists, the Web site offers members – and the industry at large – an easy-to-use and highly targeted resource for online employment connections for the petroleum industry.

In addition to posting their resumes, job seekers can browse and view available jobs based on their criteria and save those jobs for later review if they choose. Job seekers also can create a search agent to provide e-mail notifications of jobs that match their criteria.

Both members and non-members can use the AAPG Career Center to reach qualified candidates. Employers can post jobs online, search for qualified candidates based on specific job criteria and create an online resume agent to e-mail qualified candidates daily.

They also benefit from online reporting that provides job activity statistics.

❒ For employees **seeking explorationists** – You can enter job descriptions, check the status of postings and renew or discontinue postings.

✓ Job activity tracking – Your online account will include reports that show the number of individuals that have viewed your job, applied online and even how many times your job was sent out in a "job agent" or "e-mailed to a friend."

You'll see at a glance your ad's impact.

✓ Auto notification – Set the criteria for your ideal job candidate and the system will e-mail you when new resumes are a match. No more time wasted visiting the site every day to see new candidates.

✓ Company awareness – Along with each job posting you can include information about your company, your corporate logo, a Google map to your location and a link to your Web site.

Costs will be available prior to the launch date of the site, which Beighle said would be prior to the April 20-23 AAPG Annual Convention in San Antonio.

Watch the AAPG Web site for details. ❒

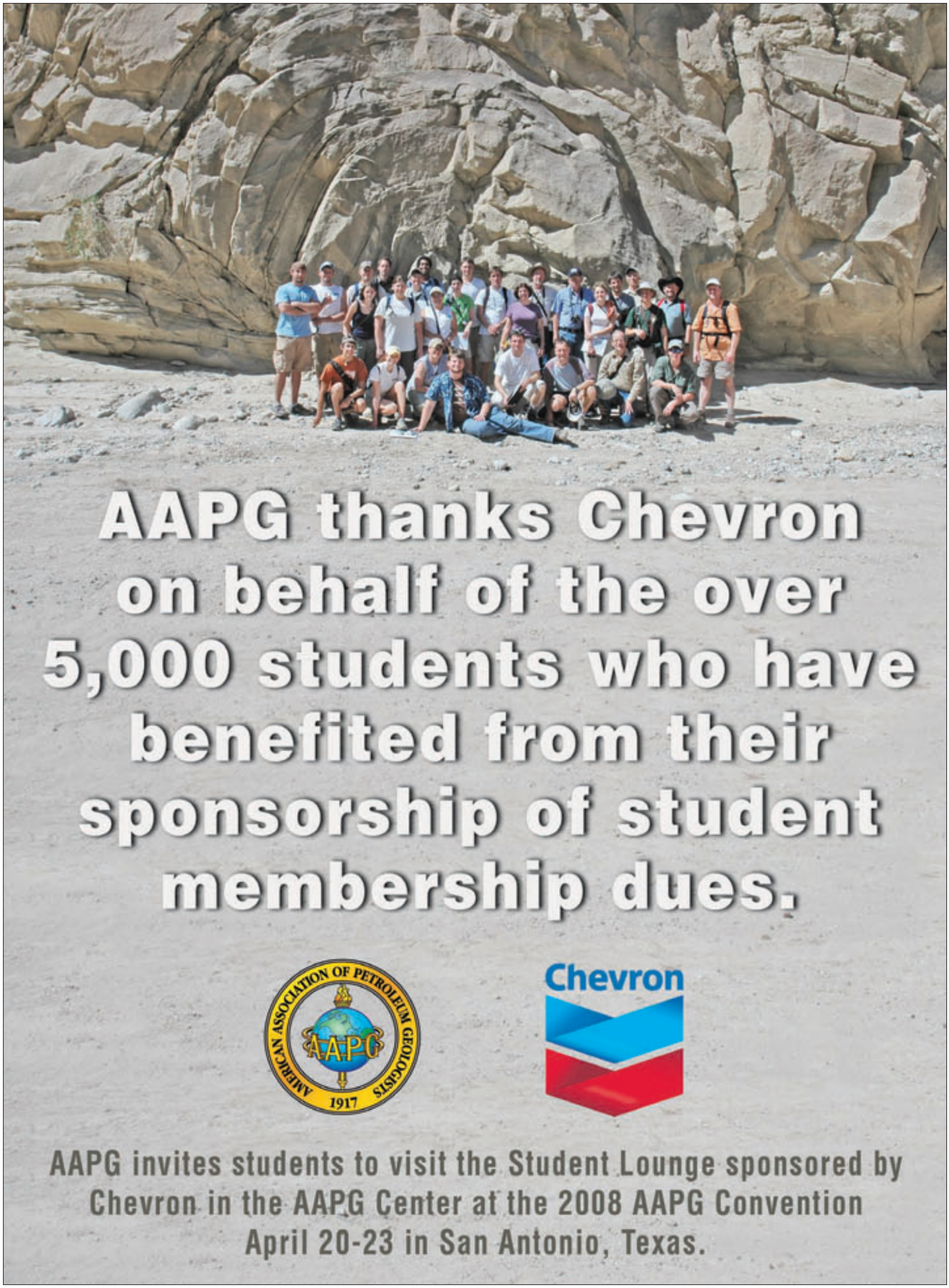
Correction


Summers

The photograph identifying Tim Summers as a source for the March EXPLORER article "Resolutions Undergoing Revolution" (page 16) was incorrect. Summers' correct photo is shown here.

Summers, the story source, is advanced imaging technology director for BP in Houston. The man pictured in the March EXPLORER is actually Tim Summers, COO of TNK-BP.

The EXPLORER regrets the error.


AAPG thanks Chevron on behalf of the over 5,000 students who have benefited from their sponsorship of student membership dues.
AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS
AAPG
1917
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AAPG invites students to visit the Student Lounge sponsored by Chevron in the AAPG Center at the 2008 AAPG Convention April 20-23 in San Antonio, Texas.

A legacy of giving: The late-L. Austin and Marta Weeks.

Weeks Award Honors Giving

The AAPG Foundation's highest honor – a new award intended to recognize "extraordinary philanthropy and service directed to advance the mission of the AAPG Foundation" – will be presented to its first recipient at the AAPG Annual Convention in San Antonio.

The L. Austin Weeks Memorial Medal was created and named in honor of one of the most generous benefactors of the Association and the scion of an AAPG giant who was himself a generous benefactor to the Foundation and the Association.

And, the first recipient of the honor is Marta Sutton Weeks, Austin Weeks' widow, who epitomizes the model of philanthropic endeavors.

She will receive the honor on April 20 in a special presentation at the convention's opening session.

Marta Weeks, who in 2005 with the then-late L. Austin Weeks, as instructed by terms of his will, made a $10 million unrestricted grant to the Foundation, also has an AAPG Foundation named grant established in her honor.

Together, the Week's family provided funding for the Frederick A. Sutton (Marta's father) Memorial Grant-in-Aid; Marta S. Weeks Grant-in-Aid; L. Austin Weeks Memorial Grant-in-Aid; and the L. Austin Weeks Undergraduate Grant Program for AAPG Student Chapters.

Marta provided funding to establish Digital Products University Subscriptions for the University of Wisconsin, University of Utah, Columbia University, University of Miami and Beloit College. She also made an additional unrestricted gift of $500,000 in July 2007.

Marta currently serves the Foundation as a Member of the Foundation Corporation, Trustee Associate and Campaign Team Leader.

"The Weeks family has left a heritage of philanthropy unparalleled in the history of AAPG that has formed the bedrock for the Association to flourish and propel it into the 21st century," said AAPG Executive Director Rick Fritz.

The late Fred A. Dix, former AAPG executive director and friend of the Weeks family, noted many times that without the Weeks family's generosity the Association would not be the leader for the profession it is today.

Lewis Weeks, Austin's father, in the early 1970s provided the money for the headquarters addition in Tulsa that bears his name: the Weeks Tower.

His son, geologist L. Austin Weeks, continued as a major, generous contributor to the AAPG Foundation. ❑

Weeks: A Legacy Of Philanthropy

Lewis Austin Weeks was born on the island of Curacao, March 25, 1925, the only child of Lewis G. and Una Austin Weeks.

At age two weeks he went to Venezuela to live, and later to Argentina and Brazil. In 1933 he was sent to the Beacon Prep School in Sussex, England, where he lived until 1939 when he went to live in Scarsdale, N.Y. He graduated from Scarsdale High School in 1942.

Austin graduated from Brown University in an accelerated program that put him through college in two years and eight months with a pre-med degree and an ensign's commission in the U.S. Naval Reserves. Following this he spent three months at Navy Communications School at Harvard University.

During the war, his overseas duty took him first to the Mediterranean theatre,

See **Austin Weeks**, next page

Marta Sutton Weeks (Mrs. L. Austin), presently of Miami, Fla., was born in Buenos Aires, Argentina. The second daughter of a geologist's family, she was reared on both the North and South American continents.

She received her early education in Holladay, Utah, and at the Bella Vista school in Maracaibo, Venezuela, later graduating from St. Mary-of-the-Wasatch Academy high school in Salt Lake City. She went on to Beloit College in Wisconsin for two years, then Stanford University, Calif., where she received a bachelor's in political science in 1951.

After her marriage to geologist Austin Weeks in 1951, she lived in Utah, Colorado, California and

See **Marta Weeks**, next page

Marta Weeks

from previous page

Maryland before moving to Florida in 1967. She is the mother of two living children; one son died in a helicopter accident at age 23.

Mrs. Weeks' job and business experience started at age 13, when her father staked her to 200 cans of popcorn and she supplied popcorn to the local oil camp populace in Maracaibo, Venezuela.

During her summers in college she worked for the legal department of the Mene Grande Oil Co. in Caracas, Venezuela, and also for the Centro-Venezolano Americano, teaching English to foreigners.

Most recently she has served as a director of several corporations, including Weeks Petroleum Ltd. She also has served three years on the Board of Trustees of Beloit College and five years as a trustee of the University of Miami.

She founded and was president for two years of the Stanford Club of Florida.

Mrs. Weeks is a strong believer in education and supports various programs in the sciences and humanities. She loves to travel and says one of the most interesting places she's ever been to was a trip to Antarctica.

Mrs. Weeks is an ordained Episcopal priest. ❑

Marta and Austin enjoyed a life of adventure – and a penchant for helping others.

Austin Weeks

from previous page

followed later by the Japanese occupation. Here he served on General Douglas MacArthur's Army-Navy communications staff in Tokyo (1945-46).

He did some post-graduate study at Brown University, then earned a master's in industrial bacteriology (1947-49) from the University of Wisconsin. During summers he worked for the Sinclair Wyoming Oil Co. in Casper as a geological assistant and researcher on magnetic properties of granites and arkoses.

In 1950, he received his master's in geology from Columbia University, his thesis being in structural geology.

From 1950-52, he lived in Salt Lake City and worked as a field geologist for the General Petroleum Corp. He married Marta Sutton in August 1951, and they moved to Durango, Colo., where Austin was field geologist for G.P.

He became a district geologist in 1953, and until 1957 did field and research work in Utah, Wyoming, Idaho, Colorado, Arizona, New Mexico and Nevada. Transferred to California in 1957, he did geological research at General Petroleum headquarters until 1960, when the company was reorganized and, along with many others, he was laid off.

Austin spent several years in real estate sales and investment before going back to work as a geological oceanographer for the Department of Commerce in Washington, D.C., as well as the Lamont Geological Observatory.

For the former, he was chief scientist for expeditions to the Andaman Islands for the International Indian Ocean Expedition in 1964, and also worked as a biologist for Columbia University, studying plankton in the Antarctic in 1963. He consulted for the Israeli government with his father, L.G. Weeks, in 1963 and also was involved in other trips to the Lesser Antilles in the Caribbean and the Pacific.

In 1970-75, he started and was president of Weeks-Tator Consultants in Miami, Fla., and in 1970-84 was involved as a vice president and director of Weeks Petroleum Ltd., a Bermuda Corporation. When this company was raided on the London stock exchange in 1984, he retired.

After that he was involved in volunteer photography in the Miami area, producing an annual calendar. He also was involved in funding support for the University of Miami, the University of Wyoming, AAPG, the Miami Metrozoo and SPE.

Weeks died in February 2005 in Florida. ❑

FOUNDATIONupdate

Donors Support Profession, AAPG

Significant gifts to funds that benefit geosciences students have been made to the AAPG Foundation.


Kelly

❒ A new gift of $25,000 for the Visiting Geoscientist Program Fund has been given by Trustee Associate and Emeritus member **Thomas E. Kelly Jr.**, of Seattle.

AAPG's VGP program provides an opportunity for students to meet practicing geologists and to discuss geological career options. Speakers usually give a technical talk in their area of expertise as well as a presentation on career options and the best way to plan a career path.

❒ Two gifts have been made to the Foundation's popular Digital Products Fund-University Subscription Program, which provides students and faculty at a designated university access to the entire AAPG digital collection. The gifts are:

✓ AAPG member **Barbara Toan Meckel**, Denver, provided funding to support a subscription for Bryn Mawr College.

✓ Trustee Associate **Robert Ardell** and his wife, **Lee Ardell**, Houston, provided funding for Austin College, Sherman, Texas.

To date, the Foundation has received over $500,000 from donors providing 42 designated university subscriptions.

For details on the program or on how you can provide a subscription to your alma mater, contact Rebecca Griffin, AAPG Foundation, at 918-560-2644.

* * *

In other Foundation news, another new member has been added to the Trustee Associates, bringing its total membership to 260. The new member is:

❒ **Terry Barrett**, Bill Barrett Corp., Denver.

Foundation (General)
Abdulsamee K. Albahbahani
Terry Robert Barrett
William J. Barrett
Richard S. Bishop
In memory of J.B. Coffman and P.W. James "Jim" Wood
George Robert Bole
Janet Sue Brister
Tiago Abreu Cunha
Howard Lyman Ellinwood
In memory of Kent Johnson
Franklyn R. Engler
In memory of Daniel Busch
Richard E. Faggioli
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Crandall Davis Jones
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Bryn Mawr College
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University of Texas
Abdulsamee K. Albanbahani

Distinguished Lecture Fund
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James A. Gibbs Family Endowment Fund
James Warren Fambrough
In memory of Thomas Mairs

Grants-in-Aid Fund
EOG Resources
Matching gift from Jeffrey May
Scott Michael Larson

Fred A. and Jean C. Dix Named Grant
James E. Briggs

continued on next page

TOTY

from page 52

whatever topic we are studying, and the different classes race each other for the best time."

"It's high stakes and very competitive," she added.

Her unique approach to connecting with her students is both "fun and relaxing," she admits.

"Once kids walk into your classroom and know that you care about them, then they want to learn."

Digging Deeper

Fitts has not only won the respect of her students, she also is viewed by her academic peers as an "extraordinary teacher," "role model," "colleague" and "mentor."

"(She's) never satisfied with the status quo," one of her colleagues said of her in recommending her for the AAPG award.

Fitts expressed her concern regarding the future of science education because of the standardized testing mandate in schools – a result of the No Child Left Behind Act.

"A lot of these state tests are of questionable quality," she said, "and I think they defeat the intent of good science instruction."

For example, Colorado's state test uses a "shotgun" approach in the effect that it is given at every grade level and the topics are very diversified, she noted. Fitts maintains this approach creates a dilemma for science teachers.

"Research shows over and over that the best way to teach/learn science is with a true, in-depth inquiry approach," she wrote.

Fitts does, however, find solace in the observation that her students are becoming conscientious of both energy and their environment, along with the effects that global warming has on their environment. She credits her students' awareness to media coverage on the subjects, coupled with her inquiry-based teaching technique.

"Whether students are trying to identify a mineral, determine how a convection current works or proposing their own hypotheses about dinosaur behavior," Fitts said, "it is my job as a responsible teacher to not only create opportunities for inquiry, but to also provide the tools, time and support to ensure that true understanding occurs.

"As a result," she continued, "I hope that when my students go on to high school, they leave my class with a solid appreciation of 'their earth' and its resources, its dynamic nature and the desire to safeguard it for the next generation."

More importantly, she concedes, "I believe that every single student I teach is capable of learning." ❑

Fitts Will Be Honored in San Antonio

Mary Fitts will receive her award as the AAPG Earth Science Teacher of the Year (TOTY) in San Antonio at the All-Convention Luncheon Monday, April 21.

In receiving the honor Fitts becomes the 11th TOTY, an award funded and presented by the AAPG Foundation.

Past TOTY winners are:

2007 – Ryan Henry (Street School, Tulsa)
2006 – James G. Schulz (Helena High School, Helena, Mt.)
2005 – Marilyn Bachman (Montecito Union School, Santa Barbara, Calif.)
2004 – Michael Fillipow (Polytechnic High School, Long Beach, Calif.)
2003 – Amy John (TseBitAi Middle School, Shiprock, N.M.)
2002 – Kevin Leineweber (McCutcheon High School, Lafayette, Ind.)
2001 – John McKinney (Castle Rock Middle School, Castle Rock, Colo.)
2000 – Peggy Lubchenco (La Colina Junior High School, Santa Barbara, Calif.)
1999 – Herbert L. Turner (Waynesville Middle School, Waynesville, Mo.)
1998 – No recipient
1997 – No recipient
1996 – Jane Justus Frazier (Natomas High School, Sacramento, Calif.)

continued from previous page

Paul H. Dudley Jr.
In memory of J.B. Coffman

John D. "Jack" Edwards Memorial Grant
Edward B. Picou Jr.
In memory of Jack Edwards

Arthur A. Meyerhoff Memorial Grant
Walter Lewellyn Youngquist
In memory of Arthur A. Meyerhoff

Weimer Family Named Grant
Robert J. Weimer
In memory of Jack Edwards and Amos Salvador

Sherman A. Wengerd Memorial Grant
Walter Lewellyn Youngquist
In memory of Sherman Wengerd

K-12 Education Fund
Roger G. Baker
Bookout Initiative
William E. Gipson
In memory of P.W. James Wood
Julius Homer Johnson
Sandra Meyer

E.F. Reid Scouting Fund
Paul H. Dudley Jr.
In memory of Robert Paschall
Ronald L. Hart
Bryan Haws
Jeffrey M. Rayner

Eugene F. Reid Dibblee Fund
Jeffrey M. Rayner ❑

INmemory

Powers Medalist James Lee Wilson; Service Awardee James Peterson


Wilson

Sidney Powers Medalist James Lee Wilson Jr., died Feb. 13 at his home in New Braunfels, Texas. He was 87.

An internationally recognized carbonate expert and consultant, Wilson taught at the University of Texas at Austin, was a research geologist with Shell, headed the geology department at Rice University and was a Distinguished Professor at the University of Michigan.

His 1975 book *Carbonate Facies in Geologic History* remains the standard textbook on the stratigraphy of carbonate rocks. It has been published in several languages, including Chinese and Russian.

Wilson received the Powers Award in 2002, Honorary membership in 1987 and the Distinguished Educator Award in 1995. He served on the AAPG Advisory Council, was an associate editor and was an AAPG House delegate, as well as serving on various Association committees.

* * *


Peterson

AAPG Honorary Member James (Jim) A. Peterson died Feb. 19, in Sedona, Ariz., where he had recently relocated from his home in Missoula, Mont. He was 92.

Peterson was a retired geology professor at the University of Montana and author of more than 150 papers and articles in journals and guidebooks. He began his career with Shell Oil and was a geologist for the U.S. Geological Survey after leaving the university in 1976.

He was publicly credited by noted paleontologist Jack Horner (the model for the hero of "Jurassic Park") for his role in serving as Horner's adviser and champion during a challenging school career.

Peterson also received the AAPG Distinguished Service Award in 1992 and the President's Award (Robert H. Dott Sr. Memorial Award) in 1988. He served on numerous AAPG committees and was associate editor on three separate occasions.

Carlos Barcat, 69
Buenos Aires, Argentina
April 13, 2007
Charles R. Barr (AC '49)
Denver
Jason Bossard, 35
Charleston, W.Va., Jan. 22, 2008
Rosella Bunch, 90
Kansas City, Mo., Nov. 2, 2006
Coy Dean Dowty, 79
Lexington, N.C., January 2007
Karl Leroy Goodall Jr., 78
Oklahoma City, May 13, 2006
Robert Harder,
Bella Vista, Ark., Jan. 26, 2008
David Harrington, 80
Houston, December 2007
Donald Kochinski, 78
Bogota, Colombia, Jan. 27, 2008
Earl Linn, 83
Rehoboth Beach, Del.
Jan. 28, 2008
William Dean Lynch, 86
Graton, Calif., Sept. 19, 2006
Lavaughn Eugene Malone, 83
Midland, Texas, Dec. 21, 2007
D. Charles Menut, 74
Matagorda, Texas, Jan. 12, 2008
Forrest Dean Molsberry, 76
Rayville, La., Aug. 20, 2006
William Newberry, 78
Austin, Texas, Dec. 10, 2006
* James "Jim" A. Peterson, 92
Missoula, Mont., Feb. 19, 2008
Paul Cletus Raymond Jr., 78
Midland, Texas, Nov. 27, 2007
William Stokes, 87
Dallas, Feb. 25, 2008
Gerald Thompson, 80
Lewis Center, Ohio, Dec. 7, 2007
Edwin Unger, 88
Midland, Texas, June 21, 2007
* James Lee Wilson, 87
New Braunfels, Texas
Feb. 13, 2008
Thomas Wintermute, 80
Corpus Christi, Texas, Nov. 1, 2007

** denotes AAPG Honorary Member.*

(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.)

Spotlight

from page 54

"This experience shaped who I am today in many ways," she continued, "and has motivated me to seek more opportunities to live and work overseas."

Chevron came to the university to interview in 1997, when the price of oil had finally seemed to stabilize and they saw the demographic need for hiring, Oatney said.

At the recommendation of her adviser, Oatney interviewed with Chevron on the university campus. She admitted to being relaxed during the interview.

"I didn't realize the seriousness of it. I brought in a satellite image of my field area," she said, "and I was really excited about the work I was doing in India."

Oatney became an exploration geologist with Chevron in 1998 in New Orleans in the deepwater Gulf of Mexico business unit. She maintained that position for a few years and then moved over into deepwater development and began work on Typhoon Field. (The Typhoon platform was destroyed during Hurricane Katrina in August 2005.)

Spanning the globe for her career: Emily Oatney, in Vietnam with a young local resident at the Fairy Stream near Mui Ne.

The World's Her Stage

Oatney picked up reservoir modeling skills while working on the Typhoon project and in 2002 she transferred to the Chevron Energy Technology Co. to work on the reservoir modeling team in San Ramon, Calif.

During her time in California, she worked on lots of projects all over the world and was exposed to international projects in Africa, Southeast Asia and Eurasia.

"It's been very interesting from a geologic perspective," she said. "I've had exposure to a variety of environments – deep water, carbonate and fluvial deltaic and I'll be moving back into the carbonate world in this new job.

"And I think with those technical experiences," she continued, "interacting with different partners and different national oil companies, I was able to apply to go overseas."

Which is what she did.

Oatney took the position as subsurface development team leader in Ho Chi Minh, Vietnam, where she lived and worked for two years. Because of her devotion to her work, she felt it necessary to learn the native language – Vietnamese.

"I would say I'm far from fluent, but I studied intensively for one year," she said. "I had six hours of lessons a week, and I would say I got to the point where I could communicate basic information."

Learning the Vietnamese language may have been a challenge for Oatney, but it was worth it. Her diligent study of the language came in handy when she was asked to participate on a televised Vietnamese game show.

"I had to sing along with a Vietnamese song that only I could hear," she remembered. "The contestants only heard what came out of my mouth and they had to guess what song I was trying to sing.

"It was embarrassing, but very funny and memorable."

The Price Is Right

The relocations have not come without sacrifice, Oatney confessed.

"It's always a challenge to leave the comfort of friends and family," she said, "but I have worked hard to maintain ties.

"I've been fortunate that my work frequently takes me back to Chevron headquarters in California," Oatney added, "which is 10 miles from where I grew up and where much of my extended family lives.

"In retrospect, I have absolutely no regrets," she said of her global assignments. "I've never looked back.

"From the day I joined Chevron, I've just been so sure of my path, and I'm so thankful that I found it," she said. "I'm constantly learning and that's been the most motivating thing for me."

As for the upcoming diversity forum at the San Antonio Annual Convention, Oatney is hopeful she'll be able "to impart something more than just a travelogue of my experiences.

"I'd really like to share some things that I've learned, so that people can feel like they've learned something new that may help them to better adapt in an international environment.

"I'm looking at diversity and how it really helps strengthen the workplace environment, and how different ideas from different cultures can really improve the way that you do business," she said.

"I've worked to adjust my own behaviors to blend with new cultural environments and to dispel gross stereotypes." ❑

Unconventional

from page 50

totally unknown."

Some of the new gas hydrate projects implemented over the last decade – and especially the last few years – include international projects designed to assess the resource potential of hydrates and to actually test the producibility, according to Collett.

"The ground is shifting before us," he said. "Our knowledge base about the hydrates, both the geological occurrence and producibility, is growing very rapidly right now."

Familiar (Shale Gas) Territory

Hot rocks and gas hydrates in particular may be all the more tantalizing because of their esoteric nature, but the more familiar unconventionals, such as shale gas, still exude panache in many cases.

For instance, on-site activity itself is a bit unconventional in at least one area of the popular Barnett shale play in Texas.

Recognizing that a primo chunk of this prolific shale sits beneath the Dallas-Fort Worth International Airport (DFW), Chesapeake Energy inked an agreement with the powers-that-be to acquire a 3-D seismic survey over the vast expanse of DFW. The last of the data were acquired in March 2007, and a big-time drilling program is well under way.

AAPG member Larry Lunardi, vice president of geophysics at Chesapeake in Oklahoma City, will provide AAPG forum attendees an overview of this activity and more during his presentation: "Unconventional Seismic – Hazard Mapping for Shale Gas Plays."

He'll describe how Chesapeake is using seismic in the many different shale plays the company is pursuing.

"In most cases, what it boils down to is figuring a way to produce a very detailed hazard map for the horizontal drilling programs we have going in all these plays," Lunardi said.

Lunardi

"It turned out to be very significant that we had that map (at DFW)," he noted.

"In this part of the Barnett, we don't have to worry so much about karst features, but you do have to worry about deep seated faults."

Chesapeake has drilled and completed more than 40 wells at DFW, and more are in the works.

"We have four conventional rigs running, and one very unusual specialty rig with a 100-foot mast on it," Lunardi said. "You can put that rig right in the flight path of a landing aircraft and not interfere with the communications or line-of-sight for the pilots.

"We're drilling right in the vicinity of runways. I visited one of the rigs a couple of months ago, and it's a bit unnerving when standing on a rig floor and you hear a 737 come roaring by," he said. "The 3-D was just as entertaining."

Horizontal wells can sit up close to the edge of the runway and then drill right under the runway providing almost unlimited opportunity for hydrocarbon recovery.

"There's no part of the airport we think we won't be able to reach with our horizontal wells given the pad sites the airport has been approving," Lunardi said. ❑

MEMBERSHIP&certification

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

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

Information included here comes from the AAPG membership department.

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

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

For Active Membership

California
Igwealor, Chinedu Michael, Chevron Nigeria Ltd., San Ramon (J. Diedjomahor, F. Uchebenu, O.E. Ajao)

Colorado
Hartman, Robert Chad, TICORA Geosciences, Arvada (T.J. Pratt, M. Beach, T.E. Lombardi); **Humphrey, John D.**, Colorado School of Mines, Golden (S.A. Sonnenberg, J.B. Curtis, R.J. Weimer); **Ilhan, M. Anna**, ReedHycalog Coring Services, Denver (T.E. Lombardi, D.K. Nishida, W.S. Houston); **Schulz, Scott G.**, Koch Exploration, Parker (K.R. McGee, G.C. Baack, J.S. Allexan)

Idaho
Gilotti, Jane A., Univeristy of Iowa, Iowa City (D.L. Campbell, D.O. Hurtubise, L. Summa)

Oklahoma
Braud, Jamsie Roberts, Gulfport Energy, Oklahoma City (R.J. Krakowski, A.N. Hall, S.G. Jones)

Pennyslvania
Beuthin, Jack D., University of Pittsburgh, Johnstown (E.P. Kvale, W.A. Bragonier, E.S. Belt)

Texas
Eckerty, Donald G., Renick & Associates, Midland (W.R. Green, H. Renick Jr., W.C. Stephens Jr.); **Heinze, W. Daniel**, consultant, Houston (N. Neidell, J.E. Jordan, R.H. Baillio); **Hobbs, Arthur B.**, independent, San Angelo (reinstate); **Korneva, Anna**, ExxonMobil, Houston (T.G. Apotria, R.W. Wellner, W.J. Dunn); **Larson, Paul Andrew**, Orion Energy Consultants, The Woodlands (R.D. Phelps, L. Czerniakowski, A. Sheriff); **Lipparini, Lorenzo**, Intergas Piu, Houston (J. Dainelli, G.A. Catalano, M. Orlando); **McLallen, Shawna Marie**, StatoilHydro, Houston (R. Hunsdale, J.F. Blickwede, P.A. Santogrossi); **Perri, John J.**, Encore Acquisition, Fort Worth (S.E. Sabatka, J.W. Rawson, R.A. Stillwell); **Skinner, Jay Douglas**, Anadarko Petroleum, The Woodlands (J.S. Munsell, G.F. Hebertson, J.B. Leedy); **Stark, Tracy J.**, STARK Research, Plano (A. Brown, B. Hardage, M. Backus); **Wachtman, Richard Jordan**, ExxonMobil, Houston (T.B. Barr, D.A. Hutchison, S.D. Tibbetts); **Wang, Ming**, Occidental Petroleum, Houston (C.C. Kemp, R.W. Cooper Jr., R. Stilwell); **Wong, Sau-Wai**, Shell Exploration and Production, Houston (H. Vinegar, H. Darman, A.S. Kornacki); **Xiuzhi, Cao**, MI Energy, The Woodlands (A.S. Harper, F.D. Foley, J.S. Sneider); **Zborowski, Maggie**, Weatherford Inc., Houston (D.J. Schultz, P. Mescher, M.L. Dixon)

Australia
Scarsbrook, Lucas John, Papuan Oil Search, Sydney (A.J. Young, R.C. Sutherland, G.M. Bradley)

Canada
Fikr, Lukas, Moh & Associates Oil Field Consultants, Calgary (W. Ghazar, J.M. Andrichuk, F.P. Rumak)

Colombia
Jaimes, Elsa J., Petrobras Colombia, Bogota (D. Abrahao, M. Garcia-Gonzalez, C.A. Govea-Rodriguez)

Egypt
Attallah, Ahmed Abdel Aal, Shell Egypt, Cairo (A. Younes, A.N. El-Barkooky, A.E. Bouma)

England
Bottomley, Steven Trevor, Premier Oil, London (reinstate); **Riley, Leslie Arthur**, Riley Geoscience, Walsall (reinstate); **Williams, Lucy Sara**, Williams Consultants, Northingtons (J.M. Lockett, A.J. Robinson, T.J. Arthur)

France
Makhous, Monzer, GeoDynamics Research, Paris (S.L. Veal, R.D. Fritz, N.V. Lopatin)

Ghana
Antwi, Kwabena B.W., Barrick Gold Mine, North Mara, Ahafo Kenyasi (C. Kusi-Manu, L.A. Apaalse, J.K. Agbenorto)

India
Chowdhury, Manabesh, Cairn Energy India, Gurgaon (Haryana) (S. Sarkar, N.K. Senapati, J. Rath); **Ghosh, Sanjoy Kumar**, Shell International E&P, Mumbai (J. Veldkamp, C. Werner, A.E. Sullivan)

Indonesia
Qivayanti, Srikanti Iman, Chevron Indonesia, Jakarta (M. Syaiful, B.J. Katz, H. Darman)

New Zealand
Roncaglia, Lucia, GNS Science, Lower Hutt (G. Browne, B.D. Field, M. Arnot)

Nigeria
Onoyom, Kingsley Solomon, Nigerian National Petroleum, Lagos (R.W.W. Lovell, W.A. Gregory, T.S.A. Akewusola)

Pakistan
Ali, Athar, MOL Pakistan Oil & Gas, Rawalpindi (I. Berczi, T.M. Jaswal, A.S.H. Zaman)

People's Republic of China
Hu, Xiumian, Nanjing University, Nanjing (L. Jansa, R.W. Scott, D. Jia)

Russia
Chuhlanceva, Elena, TNK-BP, Tyumen (J.C. Dolson, E.C. Cazier III, B.L. Steer); **Grebenkin, Ivan Mikhailovich**,

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TNK-BP, Tyumen (J.C. Dolson, E.C. Cazier III, B.L. Steer); **Grechnev, Maksim Nikolaevich**, TNK-BP, Tyumen (J.C. Dolson, E.C. Cazier III, B.L. Steer); **Grechneva, Olesya**, TNK-BP, Tyumen (J.C. Dolson, E.C. Cazier III, B.L. Steer); **Isakov, Dmitry V.**, TNK-BP, Moscow (A.A. Sutter, J.C. Dolson, S. Hafizov); **Istomina, Irina Vitalievna**, TNK-BP, Tyumen (J.C. Dolson, E.C. Cazier III, B.L. Steer); **Ivanova, Lyudmila**, TNK-BP, Tyumen (J.C. Dolson, E.C. Cazier III, B.L. Steer); **Kolosova, Yulia Vladimirovna**, TNK-BP, Tyumen (J.C. Dolson, A.A. Sutter, S.W. McFall); **Korabelnikov, Alexander Igorevich**, TNK-BP, Tyumen (J.C. Dolson, E.C. Cazier III, B.L. Steer); **Korochkina, Natalya Sergeevna**, TNK-BP, Tyumen (J.C. Dolson, A.A. Sutter, S.W. McFall); **Krivobokov, Dmitry Mikhailovich**, TNK-BP, Tyumen (J.C. Dolson, E.C. Cazier III, B.L. Steer); **Krivodanova, Evgenia Olegovna**, TNK-BP, Tyumen (J.C. Dolson, E.C. Cazier III, B.L. Steer); **Kuzmin, Dmitry Alexandrovich**, TNK-BP, Tyumen (J.C. Dolson, E.C. Cazier III, B.L. Steer); **Melchuk, Boris Yurevich**, VNII Geosystem State Research Center, Moscow (S.L. Veal, R.D. Fritz, N.V. Lopatin); **Miroshnichenko, Alexander**, TNK-BP, Tyumen (J.C. Dolson, E.C. Cazier III, B.L. Steer); **Nassonova, Natalia**, TNK-BP, Tyumen (J.C. Dolson, E.C. Cazier III, B.L. Steer); **Osipov, Sergey**, TNK-BP, Tyumen (J.C. Dolson, E.C. Cazier III, B.L. Steer); **Petrichenko, Yuri Aleksandrovich**, TNK-BP, Moscow (J.C. Dolson, E.C. Cazier III, B.L. Steer); **Podboronov, Dmitry Aleksandrovich**, TNK-BP, Moscow (J.C. Dolson, A.A. Sutter, S.W. McFall); **Pospelova, Tatiana**, TNK-BP, Moscow (J.C. Dolson, A.A. Sutter, S.W. McFall); **Savelyev, Vasiliy Petrovich**, TNK-BP, Moscow (J.C. Dolson, A.A. Sutter, S.W. McFall); **Surnachev, Dmitry Veadimizovich**, TNK-BP, Moscow (J.C. Dolson, A.A. Sutter, S.W. McFall); **Svetlakova, Nadezhda**, TNK-BP, Tyumen (J.C. Dolson, E.C. Cazier III, B.L. Steer); **Tkacheva, Natalia Alexsandrovna**, Rosneft, CJSC Elvary Neftegas, Yuzhno-Sakhalinsk (S.V. Tadepalli, A.V. Milkov, J.T. Pietras)

Saudi Arabia
Cantrell, Dave Lee III, Saudi Aramco, Dhahran (R.F. Lindsay, G.W. Hughes, S.D. Russell); **Hezam, Mohammed Abed**, Saudi Aramco, Dhahran (I.A. Al-Ghamdi, C.J. Heine, A.Y. Al-Hauwaj); **Smith, Lawrence Wayne**, Saudi Aramco, Dhahran (N.M. Robinson Jr., N. Sudakiewicz, A.K. Norton)

Scotland
Archer, Stuart Gordon, ConocoPhillips, Aberdeen (D.I.M. Macdonald, A. Hurst, A.J. Hartley); **Smith, Gordon**, Maersk Oil North Sea, Aberdeen (R.C. Standley, L.A. Evans, J. Skinner)

Thailand
Narongsirikul, Sirikarn, Chevron Thailand E&P, Bangkok (P. Eliades, R. Duncan, D. Kypfer); **Suwanruji, Padsakorn**, PTTEP, Bangkok (R.C. Shoup, M. Christopher, S. Pradidtan)

Turkey
Eren, Ahmet Aytac, Aladdin Middle East, Ankara (R. Wayland, S. Aytuna, H. Yildirim)

United Arab Emirates
Shah, Zaheer Ali, ADMA-OPCO, Abu Dhabi (O. Schoenicke, M.A. Malik, G.M. Mercado) ❑

READER'Sforum

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.

Tako Koning

Regarding your "Making a Difference" article on Tako Koning (February EXPLORER):

As a person who has witnessed and benefited from Tako's phenomenal energy for all things Angolan during my four years in the country, I'd like to say that Tako is an excellent example of how we as geoscientists can all make a difference on a day-to-day basis, to help and enhance the lives of the wonderful people that we meet during the course of our work around the world.

His energy for the AAPG, SPE and SPWLA in Luanda are well known and greatly appreciated.

If there were more people like Tako, geoscientists would be even more well respected throughout the world.

John Helm
Strasbourg, France

Work Force Déjà Vu (Again)

Regarding the words of Rick Fritz (Director's Corner, January EXPLORER) and John Hill (Readers' Forum, March EXPLORER): Yes, there is a deplorable shortage of earth science students coming through our schools and universities in the United States and western Europe – but there is no doubting the QUALITY of the young talent we recruit.

I was fortunate in 2007 to listen to presentations by master's students at the universities of Manchester, Royal Holloway and London (Imperial College) in the United Kingdom and continue to be amazed by the quality and relevance of the work – and the way the students field some tough questions by faculty and industry representatives.

I could not attend presentations at the University of Aberdeen, Scotland, but they also continue to produce petroleum geoscientists of high caliber.

The recruitment of geoscientists may still show some cyclicity, but we may well sustain the current high oil price (or higher) for some time, so opportunities have rarely been better. In the UK, remuneration in the oil sector is now matching careers in business, law and medicine – it has to, because in London we were hemorrhaging so many geoscience students to the financial services sector of the petroleum industry.

More contentiously, perhaps, it is intriguing to see the high quality of pure/applied science and mathematics training acquired by geoscience students in eastern Europe and the Far East, possibly contrasting with the more liberal curricula in parts of the "West," often reflected in some of the applications to AAPG's excellent Grants-in-Aid program.

Tony Grindrod
London, England

CLASSIFIEDads

POSITION AVAILABLE

DIRECTOR
OKLAHOMA GEOLOGICAL SURVEY
UNIVERSITY OF OKLAHOMA

Applications are being solicited for the position of Director, Oklahoma Geological Survey (OGS). The OGS is located on the University of Oklahoma campus in Norman, Oklahoma, and is under the direction and supervision of the Board of Regents of the University of Oklahoma. Organizationally, the OGS is located within the Mewbourne College of Earth & Energy, which also includes: ConocoPhillips School of Geology & Geophysics, Mewbourne School of Petroleum & Geological Engineering and Sarkeys Energy Center. The Director of the OGS reports administratively to the Dean, Mewbourne College of Earth & Energy and, depending on qualifications and experience, will hold a faculty position within the College as an Associate or Full Professor, renewable term or tenured. Candidates should hold a doctorate or have the equivalent experience in geology, geophysics or a closely related field.

The objectives and duties of the Oklahoma Geological Survey include the following:

(a) A study of the geological formations of the state with special reference to its natural resources, including coal, oil, gas, asphalt, gypsum, salt, cement, stone, clay, lead, zinc, iron, sand, road building material, water resources and all other mineral resources.
(b) The preparation and publication of bulletins and reports, accompanied with necessary illustrations and maps, including both general and detailed descriptions of the geological structure and mineral resources of the state.
(c) The consideration of such other related scientific and economic questions that shall be deemed of value to the people of Oklahoma.

The Director of the OGS has the responsibility of overseeing activities related to geological and geophysical studies of Oklahoma and adjacent areas, preparation of reports documenting the findings of these studies, and presentation of these results to individuals and agencies as appropriate and/or required.

The position requires supervision and administration of an organization of approximately 40 staff, associated facilities including offices, labs and the Oklahoma Petroleum Information Center (OPIC), which contains an extensive collection of rock cores and samples, other well information and selected facilities for the examination of these cores and samples. It is anticipated that the Director of the OGS will work with Oklahoma universities, state and federal agencies, industry and other entities to conduct research in areas of public interest, as well as providing advice and service in the areas of geology, geophysics and natural resources. The successful candidate will have the demonstrated experience and ability to conduct these activities, while acting as the State Geologist of Oklahoma. Areas that could be considered include experience with state or national surveys, administration in academia, and/or experience in industry or research.

Review of candidates will begin March 1, 2008 and continue until the position is filled. The anticipated starting date is July 1, 2008. Applicants are requested to submit a complete resume, statement of relevant experience and a list of five references who can be contacted, including names, phone numbers, e-mail addresses and complete mailing addresses. Questions or requests for additional information may be addressed to Larry R. Grillot, Dean of the Mewbourne College of Earth & Energy, and Chair of the OGS Director Search Committee, at (405) 325-3821, or lrgrillot@ou.edu. Applications and nominations should be addressed to OGS Director Search Committee, University of Oklahoma, Sarkeys Energy Center, 100 East Boyd Street, Room 510, Norman, OK 73019-1008.

The University of Oklahoma is an Affirmative Action, Equal Opportunity Employer. Women and Minorities are encouraged to apply.

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DIRECTOR'S Corner

Science Is At the 'Core' of AAPG

By RICK FRITZ

Recently, the Executive Committee and president-elect candidates met with the Advisory Council to review AAPG's strategic plan. As Winston Churchill said, "the farther backward you can look, the farther forward you are likely to see."

This is certainly true when developing a strategic plan.

The core purpose of AAPG as stated in the strategic plan is "to advance the science and profession of energy-related geosciences worldwide." This is essentially a summary of the overall mission statement in AAPG's Constitution and Bylaws (both the Strategic Plan and the Constitution and Bylaws can be viewed online at www.appg.org.).

The strategic plan also defines six goal areas:

✓ Advance the science.
✓ Continued professional development.
✓ Public awareness and understanding.
✓ Membership and member services.
✓ Financial strength.
✓ Global development.

* * *

A key discussion was about AAPG's focus. This was in the context of training received at the last AAPG Leadership Conference around Jim Collin's book "Good to Great."

In his book, Collins finds that the companies that made it from "good" to "great" developed good leadership that focused on the one thing that they did best. He called this the "hedgehog" technique.

There is general consensus that science and people should be

Fritz

> To this end, we are redirecting staff and asking committees to refocus on the science.

AAPG's focus.

Science is especially important to the health and future of AAPG. Almost everything AAPG develops for products and services is related to good science. The success of AAPG publications, short courses, workshops and conventions all are driven by science.

Quantity is not nearly important as quality. We notice this especially with the quality of the technical programs. There is a direct relationship between attendance and the quality of the science, not the quantity.

To this end, we are redirecting staff and asking committees to refocus on the science.

This may seem obvious, but there are so many new ideas and projects in an active association that it is important from time-to-time to state the obvious and make sure we are all moving together.

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One area that we want to enhance is submittals to the BULLETIN. Everyone is so busy and pressed for time that there is less time to stop and report new discoveries in our science. We ask all members to be conscious of the need to publish to keep the Association vibrant.

We especially are looking for new ideas for our "Special Pubs." I am very excited about our new release on *Outcrops of Deep-Water Sandstones*, which was previewed in the August 2007 EXPLORER. This large format book is dedicated to the late Tor Nilson. Along with Tor, the book's other editors are Roger Shew, Joe Studlick and Gary Steffens.

Outcrops are especially important for our profession, and this book has an amazing array of photographs, diagrams, etc., that depict key deepwater outcrops around the world.

This book truly advances the science, and we would love to see a whole series developed on outcrops of the world. All we need is a few champions.

* * *

Speaking of champions, I am sorry to note the sad news that one of our professions' champions, James Lee Wilson, passed away on Feb. 13, 2008. Jim was the consummate scientist and friend, and will be greatly missed (see In Memory, page 70).

As I travel around the world I have many people ask about Dr. Wilson, and his book on carbonates is often discussed with real appreciation.

One of Jim's last projects was as senior editor on a massive special publication, "The Great American Carbonate Bank." It is a compilation of key papers on the geology and petroleum potential of Sauk sequence of North America.

The co-editors, Jim Derby, Bill Morgan, Charles Sternbach and I, along with the many contributing authors, are determined to finish the book as a dedication to Dr. James Lee Wilson. Our new timeline is designed to have it on bookshelves next year.

* * *

One of our top projects for disseminating scientific information is in its final stages of planning as you receive this EXPLORER – the annual AAPG Convention and Exhibition, or ACE, being held this month in San Antonio. I hope you have the opportunity to enjoy the program.

We will try to capture as much of the geoscience as possible for later distribution.

I once heard a wise saying that "every good and excellent thing stands moment by moment on the razor's edge of danger and must be fought for."

Science is that way. We ask your help in developing quality geoscience for AAPG.

Special sessions in spotlight

DPA Agenda Full in San Antonio

THOMAS E. EWING
DPA President

The AAPG Annual Convention and Exhibition is the single greatest exercise in professional development that we have as energy geoscientists. We go to conventions to meet and network; to hear the latest in research; to see case histories of using tools and concepts to find and produce oil and gas; and to take counsel on the future of our society and our profession.

DPA plays a substantial role in all this. Although we don't host technical sessions, we have special sessions – forums – as well as short courses and our luncheon. All of these events tie directly into our professional practice and behavior, and the external factors of government policy and economic choices that affect our careers.

In San Antonio, we are sponsoring an excellent two-hour ethics course with David Abbott. His courses always are worth attending, full of case studies and real ethical problems from his inexhaustible files. We also are co-sponsoring a course on career development for new and mature geoscientists.

And our DPA Luncheon featuring Texas Railroad Commissioner Elizabeth Ames Jones already is nearly sold out.

But I want to share the lineups from our two forums:

Ewing

❒ Our headliner forum is on Tuesday morning: "Energy Resources, Reserves and the Future Workforce: Policy and Labor in the Geosciences." The session is co-chaired by general convention chair (and PTTC chair) Gene Ames, and by me.

Here's who you can hear at this event:

✓ **Larry Chorn**, chief economist at Platts, speaking on global energy competition, and what it might take to prosper.

✓ **Rod Nelson**, Schlumberger, summarizing the National Petroleum Council study on energy resources.

✓ **David Curtiss**, director of AAPG's GEO-DC office, offering the view from Washington on impacts of the NPC study and on current initiatives in work force development.

✓ **Randall Luthi**, director of the Minerals Management Service, speaking on domestic energy policy – including access to Federal lands and waters.

✓ **Dan Tearpock**, Subsurface Consultants and chair of the DPA Committee on Reserves Training, speaking on the SEC's request for changes in reserves standards, and the need for professional training of reserves evaluators.

✓ **Rick Deery**, U.S. House of Representatives Western Caucus, speaking on the political dimensions of training our future geoscience work force (especially EMSRA, the "Energy and Mineral Schools Reinvestment Act").

✓ **Pat Leahy**, American Geological Institute, speaking on investments in the geoscience work force, specifically addressing the supply side.

You need to hear all of these people, and ask them hard questions. Please come and learn about the current activity in Washington, D.C., and elsewhere, and our need to develop our future work force!

NOTE: These speakers are not listed in the registration brochure. For more information look for signs and posters at the convention, or check the Web site!

❒ Our second forum, equally outstanding, is Monday afternoon's session on "Discovery Thinking," chaired by Charles Sternbach and Ted Beaumont (see related story, page 26).

At this DPA forum, you can hear from some of the "greats" of the exploration world – people such as **Marlan Downey**, **Bob Gunn**, **Alfredo Guzman**, **Dudley Hughes**, **Herbert Hunt** and **Clayton Williams** – as they share some of their philosophy of exploration, the lessons they have learned and other insights.

Come learn about "the art of exploration!"

* * *

In fact, be sure to come to the convention and find many ways to enjoy San Antonio and South Texas.

Come to our DPA events, and learn how to develop as a professional geoscientist.

And come by the DPA booth, and learn how to join our community of professionals. ❒