AAPG AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS, AN INTERNATIONAL ORGANIZATION

EXPLORER

JULY 2009

Northern Exposure

A new assessment of Arctic potential

Vol. 30, No. 7
July 2009

AAPG EXPLORER

On the cover: A new report by the U.S. Geological Survey says that 30 percent of the world's undiscovered gas and 13 percent of its undiscovered oil are estimated to be located north of the Arctic Circle – promising news for exploration hopes in places like Alaska, this month's cover image. The USGS study is the first detailed, peer-reviewed and geologically based assessment of natural resources in that region. See story, page 6. Photo courtesy of David Houseknecht.

CONTENTS

REGULARdepartments

STAFF

AAPG Headquarters – 1-800-364-2274 (U.S. & Canada only), others 1-918-584-2555

Communications Director
Larry Nation
e-mail: lnation@aapg.org

Managing Editor
Vern Stefanic
e-mail: vstefan@aapg.org

Communications Project Specialist
Susie Moore
e-mail: smoore@aapg.org

Correspondents
David Brown
Louise S. Durham
Susan R. Eaton
Barry Friedman
Christopher Stone

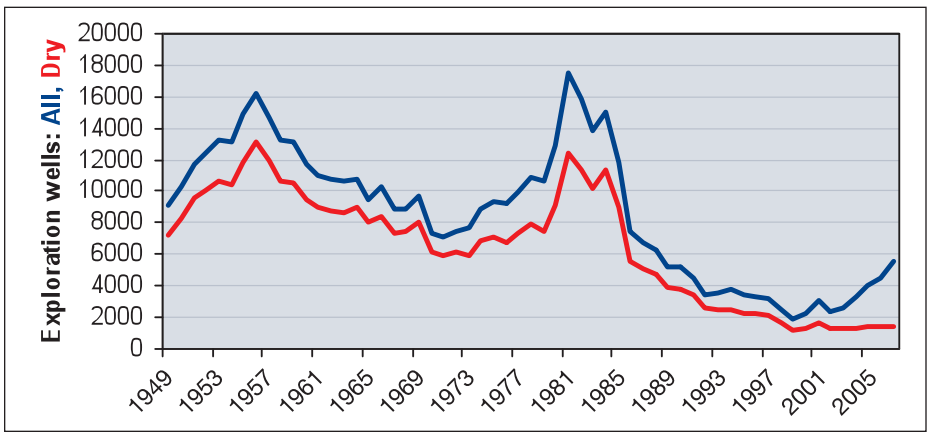
Graphics/Production
Matt Randolph
e-mail: mrandolph@aapg.org

Advertising Coordinator
Brenda Merideth
P.O. Box 979
Tulsa, Okla. 74101
telephone: (918) 560-2647
(U.S. and Canada only: 1-800-288-7636)
(Note: The above number is for advertising purposes only.)
fax: (918) 560-2636
e-mail: bmer@aapg.org

Vol. 30, No. 7
The AAPG EXPLORER (ISSN 0195-2986) is published monthly for members. Published at AAPG headquarters, 1444 S. Boulder Ave., P.O. Box 979, Tulsa, Okla. 74101, (918) 584-2555. e-mail address: postmaster@aapg.org
Periodicals postage paid at Tulsa, Okla., and at additional mailing offices. Printed in the U.S.A.
Note to members: $6 of annual dues pays for one year's subscription to the EXPLORER. Airmail service for members: $55. Subscription rates for non-members: $75 for 12 issues; add $72 for airmail service. Advertising rates: Contact Brenda Merideth, AAPG headquarters. Subscriptions: Contact Veta McCoy, AAPG headquarters. Unsolicited manuscripts, photographs and videos must be accompanied by a stamped, self-addressed envelope to ensure return.

The American Association of Petroleum Geologists (AAPG) does not endorse or recommend any products or services that may be cited, used or discussed in AAPG publications or in presentations at events associated with AAPG.

POSTMASTER: Please send address changes to AAPG EXPLORER, P.O. Box 979, Tulsa, Okla. 74101.
Canada Publication Agreement Number 40063731
Return undeliverable Canadian address to:
Station A, P.O. Box 54 • Windsor, ON N9A 6J5 • E-mail: returnsIL@imex.pb.com



Drilling is risky, but we've held the line. Due to advances in geoscience, the percentage of wildcat wells that find oil has not decreased over the years. Blue represents all wells drilled per year; red represents the number of dry holes. Data from Tonto Drilling, http://tonto.eia.doe.gov.

PRESIDENT'Scolumn

Members Provide Valuable Services

By JOHN C. LORENZ

This column will be brief. As General Ira Eaker said when he brought the U.S. Army Eighth Air Force to join the Royal Air Force in England during World War II, "We won't do much talking until we've done more fighting. After we've gone, we hope you'll be glad we came."

Lorenz

The first of several purposes of the AAPG, according to our constitution, is to "advance the science of geology, especially as it relates to petroleum, natural gas, other subsurface fluids, and mineral resources."

My primary focus as AAPG president will be to support and grow the geoscience that gives AAPG members the best conceptual tools to do their jobs of finding and producing oil and gas.

To support AAPG's geoscience endeavors, a unique combination of volunteers and headquarters staff works diligently and amazingly hard to produce the AAPG BULLETIN, the EXPLORER, special publications, spatial or GIS publications, *Search and Discovery*, training and education courses, and the annual, international and local conventions.

What other society gives you this variety and depth for $80 or less per year?

AAPG excellence in geoscience has long been recognized:

The publications of the American Association of Petroleum Geologists (AAPG) constitute the essential part of [the library of the petroleum geologist] without assistance from any other source ... No other professional organization in any science so totally dominates its field on a world wide basis. The scope of the material published by the Association is both truly international and genuinely all-embracing within the field.

– F.K. North, 1985, Petroleum Geology, Allen and Unwin, Boston, page 5.

AAPG geoscience doesn't materialize from thin air. It requires not only the volunteers and staff, but also authors, editors and teachers who have a good story to tell – and the willingness to tell it. We're always looking for good papers for the AAPG BULLETIN and other publications.

We can't publish what isn't submitted, so if you have a good geologic field study or concept paper, trot it out and let's publish it.

* * *

Beyond helping each other within AAPG, our members provide a valuable service to the world, whether it's recognized – as indeed it is in many countries – or not (as in the United States).

I was approached once at a party by an individual who asked, "I understand you are an oil and gas geologist. What do you think of drilling at ANWR?"

You recognize the loaded question. I have worked on the North Slope of Alaska and have seen firsthand that industry now does a great job of containing environmental impact there. Where else do you see oil drip pans under the engine of every parked truck?

My reply was perhaps overly confrontational, and it flustered the questioner: "Do you drive a car?"

"Well yes," he admitted, "but I don't want to."

Whether or not one "wants" to drive a car, or use fossil energy in any other way, is irrelevant. The fact is that we are reliant on fossil energy until we have an abundant and affordable alternative – and I sincerely hope that governments everywhere are foresighted enough to be funding that research hand-over-fist so that we'll have it when we need it, as we will.

In the meantime, AAPG members continue to satisfy the increasing demand for energy at affordable prices.

And with the advances in geoscience, we're doing a superb job, as shown by the constant, even improving, drilling success rate despite the diminishing target sizes and increasingly difficult targets (see graphic above). Geoscience plays a critical role in keeping the world oil supply relatively constant.

* * *

As AAPG president I have some big shoes to fill. With your help and a little luck I will be able to help maintain the high standards of this eminent, useful and indeed indispensable organization. ❑

2009-10 Executive Committee seated

Lorenz Assumes Reins of AAPG

John C. Lorenz, president of Geoflight LLC, Edgewood, N.M., assumed the presidency of AAPG on July 1.

A native of Toledo, Ohio, Lorenz earned a bachelor's degree from Oberlin College with a double major in anthropology and geology, a master's in geology from the University of South Carolina and a doctorate in geology from Princeton University.

Before forming his consultancy in 2007, Lorenz was Distinguished Member of Technical Staff for Sandia Laboratories, a geologist for the U.S. Geological Survey and a teacher in Morocco for the Peace Corps.

Joining Lorenz on the Executive Committee is **David G. Rensink**, consultant, Houston, who was voted president-elect. He retired in May from Apache Corp. Rensink will serve as AAPG president in 2010-11.

Others elected to the 2009-10 Executive Committee are:

❒ Vice president – Regions – **Alfredo E. Guzman**, consultant, Veracruz, Mexico.

❒ Secretary – **William S. Houston**, president, Silverback LLC, Denver.

Both the vice president-Regions and the secretary positions serve for two years.

Remaining on the committee are:

❒ **W.C. "Rusty" Riese**, geoscience adviser, BP America Production, Katy, Texas, vice president-Sections.

❒ **Kay Pitts**, reservoir management process analyst, Aera Energy, Bakersfield, Calif., treasurer.

❒ **Gretchen Gillis**, executive editor-books, Schlumberger, Sugar Land, Texas, AAPG editor.

Riese, Pitts and Gillis will serve their final year in their terms of office.


Lorenz


Rensink

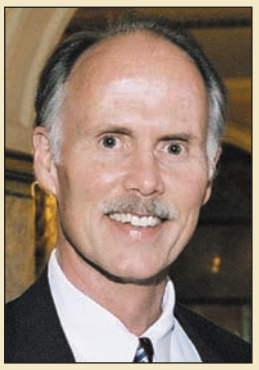

Guzmán


Riese


Houston


Pitts


Gillis


Sonnenberg

Also on the new committee is chairman of the House of Delegates, **Stephen A. Sonnenberg**, professor of geology and Charles Boettcher Distinguished Chair in Petroleum Geology, Colorado School of Mines.

Sonnenberg served as AAPG president in 2003-04. ❑

Appraisal notes frontier's opportunities

Arctic Holds Huge Resource Promise

By DAVID BROWN
EXPLORER Correspondent

The news about potential hydrocarbon resources in the Arctic sounds so promising, it's OK to be skeptical.

After all, the Arctic might be the last, great, almost wholly unexplored frontier area on the planet.

And that brings up a question of doubt.

With so little drilling, coring, seismic work, sampling, testing or even local evaluation to date, shouldn't the Arctic be an exploration mystery?

The Circum-Arctic Resource Appraisal (CARA) track at AAPG's Annual Convention and Exhibition in Denver went a long way to ending the mystery – or at least, to reveal the facts behind the U.S. Geological Survey's new Arctic assessment.

Specifically, a nine-paper session on "Circum-Arctic Resource Appraisal" was held at the convention, co-chaired by AAPG members Don Gautier and David Houseknecht, both with the U.S. Geological Survey.

Their session was a follow-up on a USGS report released to the public just days before the meeting that said 30 percent of the world's undiscovered gas and 13 percent of its undiscovered oil are estimated to be located north of the Arctic Circle.

The study, presented by Gautier and colleagues, is the first detailed, peer-reviewed and geologically based assessment of natural resources in that region.

Among the findings:

Photo by David Houseknecht

A new U.S. Geological Survey report says that 30 percent of the world's undiscovered gas and 13 percent of its undiscovered oil are located north of the Arctic Circle.

✓ Most of the Arctic's undiscovered oil and gas will be found underwater, on continental shelves.

✓ The USGS mean estimate for the Arctic Region forecasts almost 530 billion barrels of oil equivalent in undiscovered resources.

Gautier, USGS research geologist in Menlo Park, Calif., and CARA project chief, said the appraisal "covers every square inch of the Arctic north of the Arctic Circle for conventional oil and gas."

He emphasized that the assessment numbers include accumulations of crude oil and natural gas only – "no hydrates, no bitumens, no oil shales."

All in all, the findings project a huge amount of Arctic oil and gas to be discovered.

"In our view, there are significant chances for big discoveries in a number of places," he said. "The potential oil resources are substantial enough to shift the economies of the countries that border the Arctic."

First Steps

Which again brings up the question:

With so little data available, how could the USGS put together a credible resource assessment for an area the size of the Arctic?

The USGS answer:

It wasn't easy, but the results are more favorable and less risky than you might think.

First, understand the relationship between uncertainty and risk. In the CARA assessment, uncertainty and risk are essentially independent, said Gautier's colleague Houseknecht.

Houseknecht is a research geologist for the USGS in Reston, Va., an expert on the Alaskan Arctic and a contributor to the CARA study. He also was a presenter at the annual meeting in Denver.

"Data paucity definitely increases uncertainty, so our results in areas with little or no data typically display a greater range between the 95 percent probability and the 5 percent probability estimates," Houseknecht noted.

However, he said, a scarcity of data does not automatically increase risk, which the USGS considered in three parts:

✓ Charge (source rocks, maturation, migration, etc.).

✓ Rocks (reservoir, seal, trap, etc.).

✓ Timing (essentially, the temporal relation between charge and rocks).

Plenty of Data

Second, look at the Arctic data resources the USGS did have on hand.

Gautier said the appraisal was undertaken in cooperation with the Geological Survey of Canada, the Geological Survey of Greenland and Denmark, the Norwegian Petroleum Directorate and the U.S. Minerals Management Service, "as well as numerous active industry geologists.

"We got a lot of generous help from

See **Arctic**, page 8

Arctic

from page 6

them in terms of ideas and data," he noted.

Houseknecht said a challenge in the appraisal was "the extreme diversity of the data and the distribution of the data" in areas north of the Arctic Circle.

"As you go around this circle, there is a thick wedge of mostly Tertiary sediments," he noted. "In the Arctic, very few parts of that Tertiary prism have been explored."

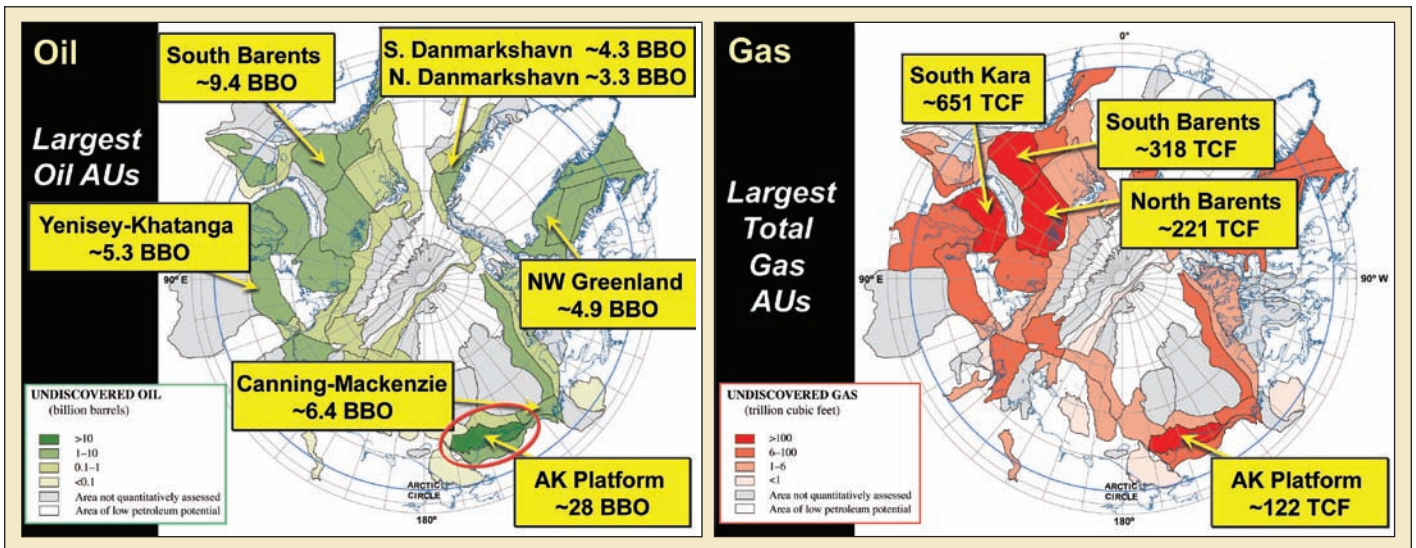
Despite the lack of drilling results and data, the CARA team wasn't working in the dark.

"When we step into non-U.S. territory, in some cases we have been able to purchase seismic data and in other places seismic sets have been published," he said.

"We also subscribe to commercial databases that have global resource estimates," he added.

The USGS also benefited from analysis of cores collected on the Arctic's Lomonosov Ridge. The coring project began as a global-warming climate study but provided new insight into the Arctic's development and tectonic history.

"I don't think it's an exaggeration to say those cores revolutionized the way scientists think about the evolution of the Arctic," Houseknecht said.



Data courtesy of Don Gautier, USGS

U.S. Geological Survey graphics showing locations and estimated totals of undiscovered oil and gas in the Arctic region.

Map Quest

Third, consider the approach the USGS used in evaluating Arctic basins.

The USGS often bases its resource assessments on petroleum-system evaluation.

That wasn't going to work in the Arctic, where exploration and production history is almost unknown.

Instead, the appraisal relied on using a sedimentary rock map to generate Arctic basin analogues.

One small problem:

An Arctic sedimentary rock map didn't exist.

Creation of that map by AAPG member Arthur Grantz and others was a key step forward in the Arctic assessment. The map is available through the AAPG's online U-Drill site.

"On the basis of that map we developed assessment units, sort of subsets of basins," Gautier said.

In some cases, projecting existing data into the Arctic region was relatively easy. Take the case of the Siberian Arctic, already known for huge gas accumulations.

"The geology runs right offshore there," Gautier said. "The shoreline is really a matter of sea level – it has no geological significance. All the geology points to an extension of this extensional basin."

In this area, onshore results provide a reliable guide to unexplored offshore exploration prospects, according to Houseknecht.

"We know from the published literature that the basin extends into the offshore, though there has been relatively little drilling offshore," he said.

You might be thinking: Just what Russia needs, even more gas reserves. Gautier conceded that point in another observation about the CARA results.

"In our estimation, the predominance of the undiscovered gas in the Arctic is in Russia," he said. "Arctic gas resources will reinforce the strategic position of Russia in relation to gas resources in Europe."

Rich Potential

For oil prospects exploration can look to the Alaskan Arctic, especially areas offshore northwest Alaska.

"That is one of the few places in the Arctic where a known, rich oil resource onshore extends offshore, and we know that thermal maturity does not increase," Houseknecht said.

He noted that an MMS lease sale in the Chukchi Sea offshore northwestern Alaska last year drew a total of almost $2.8 billion in industry bids.

"It would appear that the industry agrees with us," he said.

Then there are prospective but difficult-to-explore and hard-to-define areas, like offshore Greenland.

"The possibility exists for finding great big fields there," Gautier said.

"There are icebergs that come down, but icebergs seem to be less of a technical challenge than sea ice, which you have most of the year in northeast Greenland," he added.

Gautier sees Arctic Greenland as an intriguing exploration area, with

continued on next page

Arctic 'Standards' Called Important

Building ties for pan-Arctic oil and gas standards is one of five key recommendations by the U.S. Arctic Research Commission, according to Commission Chair Mead Treadwell.

"What's very important is that we try to raise the standards significantly across the board," Treadwell told an Offshore Technology Conference (OTC) audience in Houston in May.

Developing and strengthening standards for oil and gas exploration, production and transport would involve cooperation among the nations bordering the Arctic area.

Treadwell said other Commission recommendations are:

✓ Ratification of the "Law of the Sea" by the United States.

✓ To "keep the promise of the Oil Pollution Act of 1990" for oil spill prevention and response.

✓ To establish a "safe, secure, reliable" Arctic shipping regime.

✓ To insist on "strong biological and geological research" in the Arctic.

He noted that Arctic research by the U.S. is a $400 million per year program that involves at least 15 federal agencies.

AAPG's "3P Arctic" – officially, the Polar Petroleum Potential Conference and Exhibiton – will be held Sept. 30-Oct. 2 in Moscow, Russia. The meeting's program will focus specifically on exploration and geology of the Arctic Regions – the basins, petroleum systems and rocks.

For more 3P information go online to www.aapg.org.

– DAVID BROWN

continued from previous page

possibilities on both the east and west offshore sides.

"In west Greenland, current lower prices have put a damper on enthusiasm," he observed. "But long-term, the appetite for oil will still be there."

In some Arctic areas, the thermal history is uncertain and the nature of hydrocarbon resources remains in question.

"One of the great challenges for us was whether or not any projected accumulation was oil or gas," Gautier said.

The USGS approached the appraisal area by "developing a risking structure" to define oil and gas prospects, he said. Resource evaluations for most Arctic basin areas are best seen as a sum of probabilities.

"The whole thing is put together with a Monte Carlo simulator, so it's a probabilistic study," Gautier explained.

But in the big picture, the Arctic emerges as an exciting exploration opportunity.

"The possibility exists that some of the biggest gas fields ever found on the planet will be there," Gautier said.

Houseknecht said the USGS wanted to be clear about its methods in the Arctic appraisal so companies could "reconstruct the trail" and make their own judgments about area prospects.

"We tried to take as uniform an approach as possible, and we tried to do this assessment in as transparent a way as possible," he said.

There's no doubt that healthy exploration prospects exist in the Arctic, with the lack of exploration being a near-term inducement.

"That's the sort of thing that exploration people like," Gautier said.

"There are sedimentary basins up there that have never been tested by the drill bit." ❑

Shale play decline rates in perspective

No Recession for the Haynesville

By LOUISE S. DURHAM
EXPLORER Correspondent

The music you hear wafting through the oil patch likely emanates from a group of natural gas operators singing the blues.

It's entirely justified given the brutal plunge in price from $13.50/mcf in July 2008 down to where it's now flirting with the $3 mark.

Of course, it may be a temporary dirge – some analysts expect prices to return to $7 or even beyond during the coming winter, due in part to recent cutbacks in exploration.

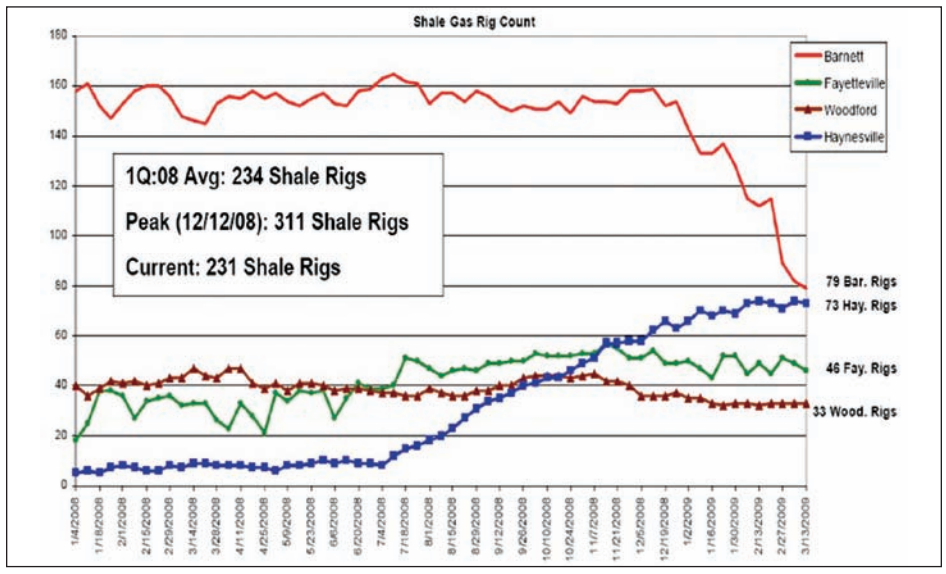
But why wait? Some, notably, are singing a different tune right now.

In the high-profile, still-fledgling Upper Jurassic Haynesville shale gas play in northern Louisiana the action has pretty much remained on a steady track.

"We saw a peak number of 95 rigs at one point," said Don Briggs, president of the Louisiana Oil & Gas Association, "but about half of these were drilling in the (younger) Cotton Valley. The number of Haynesville wells has been stable."

Chesapeake Energy is credited for kicking off the play when it announced its initial Haynesville shale gas discovery early in 2008. The company has curtailed some production for now but maintains its role as a principal driving force in the action.

"We continue to build out our expansion plans in the Haynesville, and we're currently operating 26 rigs," said Kevin McCotter, director of corporate development at Chesapeake. "We expect to be operating 30 at the end of this year and 35 by mid 2010."



Graphic courtesy of Louisiana Oil & Gas Association

Statistics vividly tell the story: Activity in Louisiana's Haynesville shale play is booming.

Reasons to Sing

Petrohawk Energy, another major force in the play, also is forging ahead with its program.

"We're not cutting back on drilling," said AAPG member Dick Stoneburner, chief operating officer at Petrohawk. "We've invested in a sizeable leasehold that's as good as any set of leases in the play from a quality standpoint.

"To defend those leases that expire in two years, we put together a program that will have 16 rigs running by the last quarter of '09," he said. "We'll maintain that 16 rig program at a minimum through mid-to-late 2011.

"We have a program here that's got decades worth of development," he noted. "We think it's prudent to learn as much as we can about this field – if you compromise data gathering and operational expertise, then you get behind."

Stoneburner noted the company has not cut production in the play.

"It's a significant production volume to us, but we're not changing the world by doing what we're doing," he noted. "Supply and demand will correct with time."

Initial well productivities that average about 20 MMcf/d have been announced by some companies involved in the play.

"Our statement to that is we continue to enjoy the same types of initial production rates generally announced by industry," McCotter said, "and we continue to be extremely pleased with our operating results."

What Goes Up …?

On the downside, there's been plenty of talk that these babies decline seemingly at the speed of light, with first year decline rates of about 80 percent being tossed around – but the jury's still out, according to McCotter.

"There's not that much information published on decline rates," he said. "I think that's because this is such a young play, and there's not a long history of existing Haynesville wells.

"It's a big question mark that a lot of operators have," McCotter added.

Steve Dixon, chief operating officer at Chesapeake and an AAPG member, noted that everyone is aware that the Haynesville has a very steep first year decline.

He pointed out that the company has only two wells more than one year old, and these had neither many (frac) stages nor long laterals.

Stoneburner, too, put the issue of decline into perspective.

"When you start at 20 million a day," he said, "you can give up a high initial decline rate and still have a significant reserve as

See **Shale Play**, page 12

LOGA Acts Quickly to Handle Haynesville 'Good Times' Era

South Louisiana has long benefited from its high profile let-the-good-times-roll allure.

Now it's northern Louisiana's turn to bask in the limelight, thanks to the relatively new, high-potential Haynesville shale gas play.

Marjorie McKeithen, secretary of the State Mineral Board was quoted as saying "this is an extraordinary time for Louisiana, particularly in North Louisiana, where we are experiencing something akin to a modern day gold rush due to excitement about the Haynesville shale discovery."

Given the play's current and potential impact, it was only a natural for the Baton Rouge-based Louisiana Oil & Gas Association (LOGA) to open a satellite office in Shreveport, not far from the core of the play.

"I don't have to be hit over the head but maybe once to get my attention," said Don Briggs, LOGA president. "It was pretty obvious that a lot of wells will get drilled over the next several years, and we'll have a lot of issues.

"We wanted to be there to help educate and help put all our guidelines and regulations in place as the industry developed up there," Briggs said, "because this was going to be something we've never seen before."

This is a region that's rural in large part, one where many of the inhabitants eke out a living as best they can. Low incomes are the norm in much of the countryside.

LOGA recognized the need for seminars to educate the landowners here in such topics as mineral ownership, leasing, etc. Briggs noted at one seminar they had an attendance of 1,500, where they had expected maybe 400 at the most.

"There were people that never would have had the opportunity in a lifetime to have the kind of revenue they were potentially going to get," he said. "Some people ended up millionaires – it truly was like the Clampetts.

– LOUISE S. DURHAM

Shale Play

from page 10

long as the hyperbolic component of the curve is real.

"The industry should now realize the hyperbolic component is there," he noted. "What the component is may still need more time and refinement to make a more accurate forecast on reserves."

Typical laterals on the horizontal Haynesville wells range from 4,000 to 4,500 feet, with a vertical wellbore usually maxing out between 11,000 and 13,000 feet. Average well costs tally about $7 million, according to McCotter.

The potential for the play kind of boggles the mind.

"We recently announced that we believe the Haynesville will likely become the nation's largest natural gas producer by 2015," McCotter said. "That speaks to the massive size of the Haynesville – and in fact we estimate there's about 250 trillion cubic feet in the Haynesville.

"We see it as roughly a 3.5-million-acre area predominantly in north Louisiana and east Texas," McCotter said. "In this 3.5 million area we see 4,700 sections, and within each section we believe there's about 180 Bcf, of which 52 Bcf is recoverable.

"In 2007, the EIA estimated the nation consumes about 21 Tcf a year," he noted. "The Haynesville alone could run the country for 12 to 15 years."

Home-Grown Success

Chesapeake is continuing to lease in the play, albeit at a different price structure than last summer.

"After the binge of 2008, which was like drunk sailors on shore leave, reality has set in," said John Hyatt with Pinoak Operating in Shreveport. "A few landowners are asking, 'Where's my $25,000?' but prices now are anywhere from $1,000 to $5,000 an acre for the Haynesville, depending on where you are."

This area historically has been home to many small operators looking for finds in the Hosston and Cotton Valley formations, and many successful wells have been drilled – although nothing like the deeper Haynesville.

Hyatt noted, however, that lease prices and royalty for these shallower horizons have escalated due to all the Haynesville action, forcing a lot of the longtime players to re-evaluate their activity.

Given today's more reasonable yet still-high price to enter the play, this is not the place for novice companies to try their hand at drilling. Instead, some new faces have appeared on the scene via other means.

Mainland Resources in Houston, for instance, acquired a 2,700-acre leasehold having stacked pay that paved the way to a joint venture in the Haynesville with Petrohawk.

"Petrohawk is on the third well in the venture now," said Mike Newport, president and CEO at Mainland, which originated early in 2008.

"We also picked up the zones above the Haynesville – the Cotton Valley, Hosston, Bossier – and already have the reserves report," Newport said. "We could start drilling there and use the existing infrastructure to develop these."

Current activity in the Haynesville play includes developing the infrastructure needed to move the present and anticipated shale gas production to market.

Despite the region's long history of production in the shallower zones, none of the gathering systems in place are capable of handling the sizeable capacities or high pressures of the Haynesville shale gas.

McCotter noted Chesapeake has made a commitment to two lines being constructed, one appropriately called the Tiger pipeline in deference to the often-intense allegiance much of the populace harbors for the state's flagship university, Louisiana State University. Another pipeline, the Haynesville Connector, also is being constructed.

Chesapeake has taken a very visible lead – along with high-profile AAPG member T. Boone Pickens – in promoting the use of compressed natural gas (CNG) for transportation. McCotter predicted the Louisiana legislature is poised to enact some of the most far-reaching state legislation in the country that provides tax incentives for CNG.

The legislation will target consumers who convert vehicles or buy a dedicated vehicle, as well as private entrepreneurs installing CNG fueling equipment at service stations.

"If we're going to be the largest U.S. natural gas producer," McCotter said, "then Louisiana should take a leadership role in promoting the use of this very American, clean-burning, job-creating fuel." ❑

Ethics Woes Sometimes Overlooked

'Pay attention, keep your balance, do what's right'

By LOUISE S. DURHAM
EXPLORER Correspondent

Remember when Mom was always on your case, constantly harping about honesty being the best policy, doing good unto others, doing the right thing?

Here's hoping you took her wise counsel to heart.

It could be key to your success in today's often unsavory business world – an environment where both personal and corporate misdeeds have spun out of control in many instances, harming numerous innocent people.

It is timely indeed that ethics is becoming an increasingly popular presentation topic at professional meetings, including those in the earth sciences community.

Over the past year, various AAPG-affiliated societies had the opportunity to hear U.S. District Judge Lynn Hughes drill down into the ethics milieu during his appearances as the Distinguished Lecturer-Ethics for AAPG.

"The goal with this ethics talk is not to convert crooks," said Hughes, a lawyer who has been a federal judge for more than two decades. "It's to help already honest people recognize dangers and help them be strong when they need to be.

"The audiences have been interested and asked good questions," he said. "And the year has been very good for me because it's important for people like me to relate and meet non-lawyers, non-judges – this helps my perspective.

"The questions geologists ask are different than lawyers and law students have," Hughes noted. "That gives me a better understanding of how the scientific citizenry and others handle ethics problems."


Hughes

> His goal: "Help already honest people recognize dangers and help them be strong when they need to be."

Finding a Balance

Hughes commented on the issue of trust, first outlining the three forms of capital:

✓ Tangible assets, e.g., oil and machinery.

✓ Intangible attributes of people, e.g., knowledge and skills – these are human capital.

✓ Intangible culture, e.g., institutions, practices, relationships – these are social capital.

"The predominant component of social capital is, quite simply, trust," Hughes emphasized. "The value of the first two types depends entirely on the third."

He cautioned that you can't recruit or retain good workers if your operation has a reputation for dishonesty. The workers recognize that if you lie to the company's owners, you will lie to them.

"Knowledge – and they will know – of cheating at the top engenders either alienation or emulation at the bottom," Hughes said. "Both kill success."

Oftentimes, many ethical problems are overlooked. After all, people are busy, life tends to be confusing and problems often arise because people aren't presented with an isolated, precise, antiseptic problem.

"Real people are confronted by moral questions buried in the confusion of context," Hughes said. "People are immersed in a fog of interest, uncertainty and conflict – no man is an island – and these are some of the things that cast shadows on judgment.

"Lying has costs," he noted. "If discovered it can cost you your job, and worse, it can cost you your reputation, precluding another job.

"On the other hand, telling the truth has costs, and these cloud your judgment," Hughes said. "Having worked in a firm for 25 years – having paid (your) dues in time, unattractive assignments and cranky bosses – is an investment. People are reluctant to jeopardize that capital by not 'going along' with the team.

"People tend to overestimate truth's jeopardy from within and to underestimate deception's jeopardy from without," Hughes said. "The children need feeding, the mortgage must be paid and that seems more immediate than the risk of an SEC summons – the choice is between difficulty and disgrace."

Hughes stated if he could condense a 30-minute ethics discussion into a billboard, it would say, "Pay attention, keep your balance, do what's right".

Seeking Integrity

So, you ask, how do geologists and other geoscientists measure up in the ethical sense?

"From my conversations," Hughes said, "my sense is geologists are ethical both in their scientific integrity and their personal integrity."

He noted the fairly recent reserves scandals stemmed largely from management's bureaucratic perversion of the geology rather than "wicked" engineers.

"You can do excellent science and math, but what people do with it may be different from what you thought it would show," Hughes said.

When queried about the general public's perception of the oil and gas industry as a price-manipulating entity also intent on defiling the planet, the empathetic Hughes commented wryly: "You've heard what people say about lawyers."

He noted it's important to keep in mind that such critics don't know what they're talking about.

See **Ethics**, page 35

… and a 'Huzzah' to Walcott, too

'Shale Ale' Offers Toast to Burgess

By SUSAN R. EATON
EXPLORER Correspondent

One hundred years ago, on Mount Burgess in Canada's Yoho National Park, Charles Doolittle Walcott, former head of the Smithsonian Institute and the U.S. Geological Survey, discovered the world's most important fossilized animals.

So, let's lift a glass in celebration – and here's the perfect drink for the toast.

The Burgess Shale Geoscience Foundation (the BSGF) and Big Rock Brewery have launched "Shale Ale," a historical twist on Big Rock's Traditional Ale. A limited edition beer made exclusively for BSGF, the Shale Ale label depicts Walcott surrounded by the 505-million-year-old Burgess Shale fossils, famous for their amazing diversity, bizarre life forms and out-of-this-world appendages.

Shale Ale was launched in Calgary – to great acclaim – at the annual technical convention of the Canadian Society of Petroleum Geologists, the Canadian Society of Exploration Geophysicists and the Canadian Well Logging Society.

In fact, Shale Ale stocks ran out during the gala, as the 3,700 geologically-savvy attendees enthusiastically saluted Walcott's monumental discovery; the empties, with their amazing artwork labels, were taken home as collectors' items.

"This is the champagne of beers to celebrate the contribution that geologists have made to science," said BSGF executive director Randle Robertson. "Shale Ale kicks off our 1909-2009 Centennial Celebrations, which are designed to engage the public in geology, climate change and the history of exploration and discovery in the Rocky Mountains."

During the past 14 years, the BSGF, a not-for-profit, geoscience educational organization based in Field, British Columbia, has guided more than 45,000 clients from all over the world to the Burgess Shale-Walcott Quarry and Mt. Stephen. These two fossil locales in Yoho National Park were protected, in 1981, when they were declared UNESCO World Heritage Sites.

"We are pleased to support the Burgess Shale Geoscience Foundation, to promote its vision to inspire appreciation for the earth and life sciences, and to continue to find ways to educate the public on the importance of current and future environmental issues," said Jim Button, vice president-corporate and community affairs for Calgary-based Big Rock Brewery.

Button, new to the Burgess Shale, was "gob-smacked' by the geological community's passion for Shale Ale.

A New Brew Crew

Why do geologists thirst for Shale Ale?

"Certainly beer and geologists are a natural fit, and, as such, Shale Ale was very well received at the conference," said David Brown, an AAPG member and a senior petroleum geologist with the Canada-Nova Scotia Offshore Petroleum Board. "As a marketing tool it certainly highlighted the Burgess Shale and the efforts of the BSGF to enlighten the public about this geological treasure."

Brown's comments were echoed by Clint Tippett, a principal regional geologist with Calgary-based Shell Canada Energy.

"Geologists tend to be a bit more beer-oriented than most, partly by reputation and partly because socializing is central to the discussion of new ideas and the sharing of results in the geological community," he said.

An AAPG member, Tippett volunteers as an instructor for the BSGF's annual science teachers' workshop, a four-day crash course on geology 101 that uses the Canadian Rockies as its teaching platform.

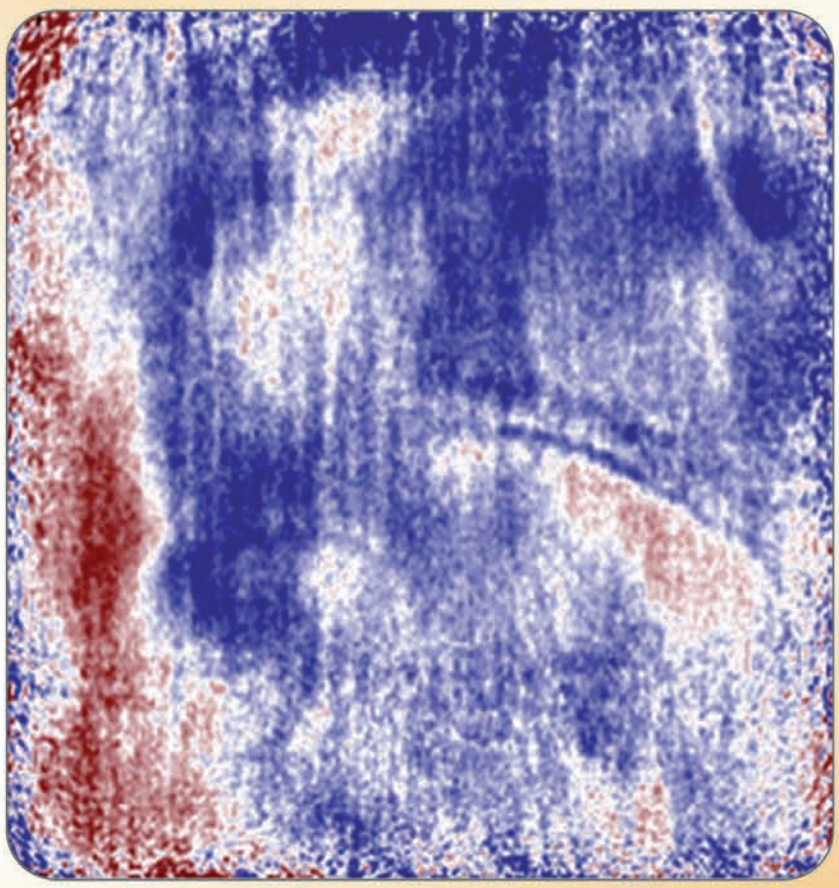
"Shale Ale raises the BSGF's profile because it is a topic of conversation," he said. "It obviously helps when the beer is a good one."

"Shale Ale has an immediate connection and charm for geologists," said Philip Benham, a staff geologist at Shell Canada Energy who also assists in the annual science teachers' workshop. "My friends who are not geologists are intrigued by the label, and I have had to give them lectures on the Burgess Shale creatures.

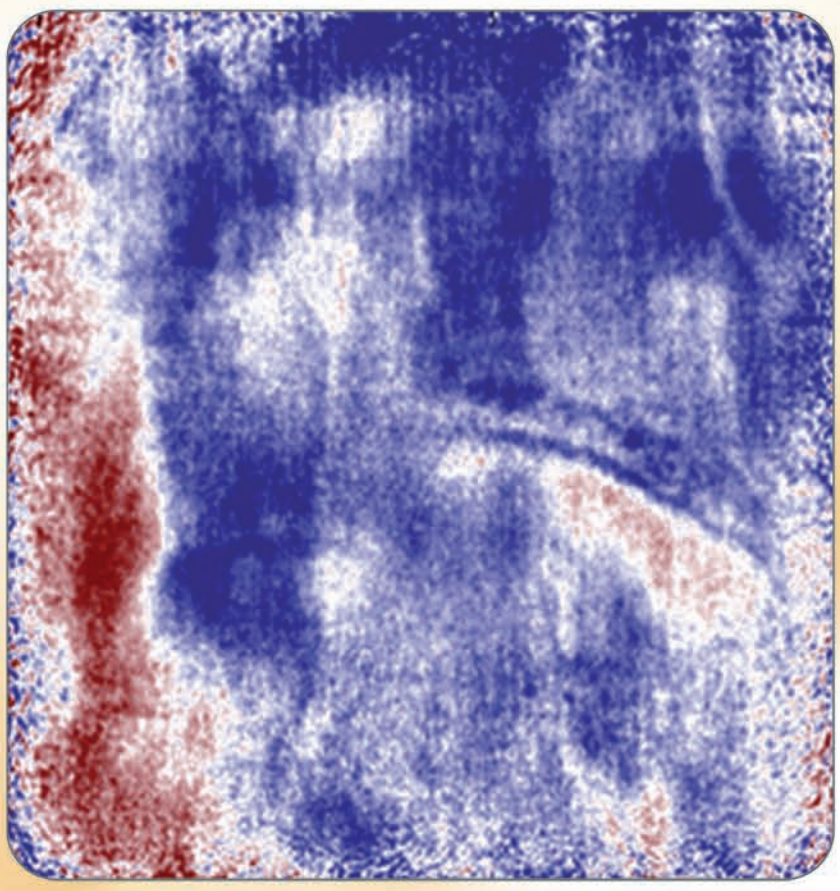
"Clearly, the image designed for the label has captured their imagination," he added. "It has served to educate the public about the anniversary and significance of the Burgess Shale more than I could have expected. So, as a marketing tool, I can't imagine a better idea – good thing we registered the image."

For more information on the BSGF and its extensive 2009 Centennial Celebrations, go to www.burgess-shale.bc.ca. ❑

Groundbreaking **Ingenuity** Leads to Success



Slip-sweep production*



V1 single-vibrator production*

CHALLENGE

- To provide a step-change in the quality and productivity of land seismic images for noise-plagued reservoirs.

SOLUTION

- The pioneering CGGVeritas V1 enables high-density single-vibrator wide-azimuth land acquisition on high-channel-count crews. With its very high productivity, V1 ensures that these demanding surveys can be efficiently acquired with a smaller bin size for high resolution. The dense source and receiver grids increase wavefield sampling for improved imaging and a reduced acquisition footprint.

RESULTS

- V1 provided superior high-resolution images over conventional vibrator fleet acquisition and maximized crew performance by using the available vibrators more effectively.

CGGVERITAS

cggveritas.com

*Data courtesy of Apache Egypt

09A-SV-214-V1

Works by Geologists Sought For 'Geology and Art' Show

The Two Wall Gallery on Vashon Island, Wash., has issued a "call for artists" who also are geologists (or other geoscientists) to submit works for an upcoming show titled "Geo Sapiens – The Fusion of Geology and Art," planned for November 2009.

The show's theme centers on the idea of incorporating geologic principles or features in artworks, building upon the observation that earth scientists think in ways that often are different from the general population but fundamental to a collective understanding of the universe.

Works that incorporate geology to make definitive statements regarding issues of relevance to human society are appropriate, as are works that simply celebrate geologic thought.

Works in all media are invited. Entry is open to all degreed earth scientists and students studying earth science topics. You do not have to be a practicing or employed geologist to apply. Up to three works may be submitted as slides or on a CD. Works should be available for sale unless other arrangements are made.

For more information contact Greg Wessel at SleepingDogCafe@aol.com.

Submissions will be accepted until Sept. 1.

– BARRY FRIEDMAN

GCS proposal also unveiled

House Delegates Lower Membership 'Time Rule'

By LARRY NATION
AAPG Communications Director

The three-year requirement before a member can be considered for Active membership was changed to one year in a close vote of the AAPG House of Delegates at the Denver Annual Convention.

The debate centered on whether the three-year Active membership eligibility requirement provides an indication of professionalism and whether the time requirement was a stumbling block to Active membership.

The proposal garnered the required two-thirds majority by two votes. A motion for a no-membership-time requirement was voted down.

Another proposed bylaws change that required endorsers for Active members to know the applicants for at least one year also was voted down.

A section of the original motion passed that provides the Executive Committee may not waive the endorsement or professional experience requirements, which is now one year by the previous vote.

HoD Chairman George Bole presided over the meeting, with 197 certified as voting delegates. There are 225 total delegates in the HoD.

Other Business

Four items dealing with legal language "housekeeping" were approved, including a change clarifying that the Advisory Council will not recommend recipients for awards of a technical nature, such as the Matson Award for best paper at an annual meeting.

Delegates voted to return to committee consideration a proposal to provide student membership only to full-time students.

Withdrawn was a proposal to change the bylaws to include recipients of the Michel T. Halbouty Outstanding Leadership Award as Honorary members.

Delegates also discussed a concept for a new "Global Corporate Structure" (June EXPLORER), with information provided by Marty Hewitt, chair of a special presidential committee that incorporated input from various committees that have studied the topic since the 2004 AAPG Strategic Plan.

AAPG President Scott Tinker told delegates that HoD consideration was another step "to move forward on a concept for a legal, governance and structure for AAPG to operate worldwide while protecting AAPG assets."

The concept and voluminous background and explanatory material previously were sent to delegates, reported in the *Delegates' Voice* and available on the AAPG Web site.

Hewitt, past HoD chairman, said "a sense of the House" was being sought, with the intention of honing the concept by the HoD Constitution and Bylaws Committee, with a goal of a vote by delegates on a proposal at their 2010 meeting during the AAPG Annual Convention and Exhibition in New Orleans.

Assuming HoD approval of that proposal, the measure would go to the AAPG membership for final ratification. If the timeline were met, implementation would be in 2011.

Following 26 minutes of discussion, the House voted to move on to other business.

House Elections, Awards

Delegates elected **David Hawk**, a Boise, Idaho, consultant and recently retired as director of energy natural resources for J.R. Simplot Co., as HoD chair-elect, and **Laura Zahm**, of the Bureau of Economic Geology, the University of Texas at Austin, as secretary/editor. Both will assume office on July 1, and Hawk will serve as HoD chairman in 2011-12.

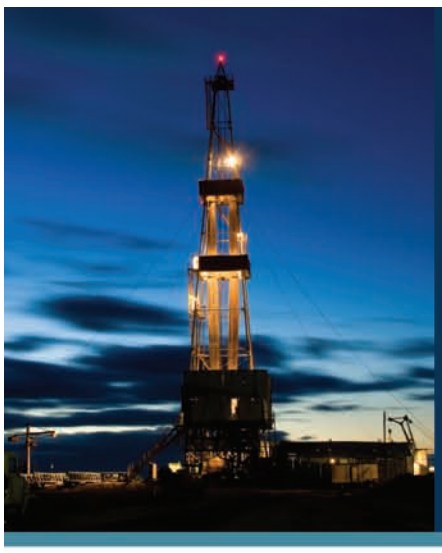
House honorees included:

✓ **Terry Hollrah**, Oklahoma City – Honorary Member of the House.

✓ **Susan Landon**, Golden, Colo. – Distinguished Member of the House.

✓ **Marilyn Taggi Cisar**, Cypress, Texas – Long Service Award.

✓ **Donald K. Murray**, Lakewood, Colo. – Long Service Award. ❑



3P ARCTIC

POLAR PETROLEUM POTENTIAL
CONFERENCE & EXHIBITION

The Geosciences Event for the Arctic

30 September — 2 October 2009 • Moscow
Gubkin Russian State University of Oil & Gas

Pre-register by 1 September and Save!

AAPG & RosGeo Members: €295
AAPG & RosGeo Non Members: €395
Presenters and Academia: €150

*More than 100 presentations, including:

*Program subject to change.

Plenary Session
- Results of the U.S. Geological Survey Circum-Arctic Resource Appraisal (CARA)
- Regional Geological Context of Arctic Frontier Basins
- Geology and Petroleum Systems of the Russian Arctic Sedimentary Basins

Arctic Alaska/U.S. Chukchi Sea/Beaufort Sea/Canadian Arctic
- Petroleum Potential of Banks Island Segment, Canadian Arctic Passive Margin: Results from a New Regional Deep-Seismic Survey
- The Petroleum Geology of Umiat Oil Field, North Slope, Alaska
- Evolution of the Eastern Sverdrup Basin: Insights from New Field Studies and Sediment Provenance Analyses

Arctic and Circum-Arctic Petroleum Systems, Plays and Assessments
- Cretaceous Palaeogeography and Palaeo-Earth Systems Model Results for the Arctic: Climate Proxies and Model/Data Comparisons
- Uncertainty in USGS Estimates of Undiscovered Arctic Petroleum Resources
- Polar Petroleum Potential: Regional Effect of Ice Cap in Optimizing Petroleum Potential in Polar/Arctic Region

Arctic Environmental and Exploration Challenges
- Strategic Advancement by Usage Metering System; Saving Dollars While Increasing Productivity
- Holistic Approach to Reduction in the Environmental Footprint of Arctic Offshore Seismic Surveys
- Production Methods for a Light Oil in a Cold Reservoir Below Freezing Temperature: Umiat Field, National Petroleum Reserve, Alaska

Baffin Bay-West Greenland
- Assessment of Undiscovered Oil and Gas Resources of the West Greenland-East Canada Province
- Cenozoic Seismic-Stratigraphy, Depositional Systems and Fluid-Flow Features in NE Baffin Bay, West Greenland
- Cretaceous-Palaeogene Basin Development and Prospectivity in the NE Baffin Bay, West Greenland

Eastern Barents Sea
- Evaluation of the Late Cretaceous-Cenozoic Uplift and Petroleum System Modeling of the Russian Barents Sea Basin
- Offset and Curvature of the Novaya Zemlya Fold-and-Thrust Belt, Arctic Russia
- Geological Structure of South-Western Laptev Sea Region

High Arctic Tectonics and Petroleum Potential
- Mendeleev Ridge Ambiguities and the Need for Drilling
- Circum-Arctic Petroleum Systems Defined Using Biomarkers, Isotopes, and Chemometrics
- Petroleum Assessment of the Eurasia Basin, Arctic Ocean

North Atlantic Conjugate Margins
- Dreki Area – Jan Mayen Ridge: First Licensing Round on the Icelandic Continental Shelf
- Late Mesozoic-Cenozoic Evolution of the Conjugate Lofoten-Vesterolen (Nordland VI-VII) and NE Greenland Continental Margins: Implications for the Potentially Developed Petroleum System
- Jameson Land (East Greenland Onshore): Interpretation of Devonian and Carboniferous Subsurface Sediments Using New Reprocessing Seismic Data and Gravimetric-Magnetic Studies

Northern West Siberian-South Kara Sea
- Yamal-Gydan Source Rocks and Oils
- Geological Development and Hydrocarbon Potential of the Yenisei-Khatanga Trough, Russian Arctic
- Petroleum Systems of the Western Yamal Shelf

Siberian Arctic: Laptev, East Siberian and Russian Chukchi Seas
- Some Features of Geological Structure of the Sedimentary Basins in the East Siberian Sea and Western Chukchi Sea
- Tectonic Structure and Geological History of Russian Chukchi Sea and East Siberian Sea Shelf
- Evolution of the Laptev Continental Rifts as Revealed by 2-D Gravity Modeling, Plate Reconstructions and Palaeogeographic Mapping

Tectonic Evalution of the Arctic Mesozoic-Cenozoic
- Cenozoic Evolution of the Eurasia Basin Based on Analysis of Potential Field and Bathymetry Data
- Origins of the Amerasian Basin: A New Model
- Arctic Magmatism: Distribution, Age and Implications for Basin Development and Petroleum Systems in the Barents Sea

Tectonics Evolution of the Arctic: Late Proterozoic-Paleozoic
- Is the North Slope a Displaced Part of the Caledonian Orogenic Belt?
- Tectonic Heat Flow During the Pangaean Permo-Carboniferous Orogenic Collapse: Implications for the Arctic
- A Paleozoic Northwest Passage and the Timanian, Caledonian and Uralian Connections of Some Cordilleran Exotic Terranes

Western Barents Sea
- Chemostratigraphy: A New Approach for the Subregional Correlation of Triassic / Jurassic Sequences of the Barents Sea
- Triassic Source Rocks of the Barents Sea and Svalbard
- Jurassic Seismic Sequence Stratigraphy and Paleogeography of the Norwegian Barents Sea

Poster Sessions
- Geology and History of Discovery of the Point McIntyre Field, North Slope, Alaska
- Ellesmerian Tectonism: A Critical Appraisal from a Circum-Arctic Perspective
- Platform-Margin Deltas in the Early-Middle Triassic in the Norwegian Barents Sea

For complete details visit www.3pArctic.com

Hosted by RosGeo
Organized by AAPG & All-World

Russian Geological Society (RosGeo)

ALLWORLD EXHIBITIONS

3P ARCTIC
The Polar Petroleum Potential
Conference & Exhibition

With the support of The Council of the Federation Committee on Natural Resources & Environmental Protection, Russia

www.3pArctic.com

WASHINGTONwatch

AAPG Makes Impression on 'The Hill'

By DAVID CURTISS
GEO-DC Director

Curtiss

GEO-DC was pleased to host 14 AAPG members in Washington, D.C., in May for the first-ever AAPG Congressional Visits Day (AAPG CVD).

As frequent readers of this column know, AAPG has regularly participated in the Science Engineering Technology Congressional Visits Day. Each year this large gathering brings together a broad spectrum of science and engineering associations and societies whose members come to Washington, D.C., and communicate to Congress the importance of science and engineering.

Similarly, last autumn AAPG participated in the first geosciences Congressional Visits Day, along with other member societies of the American Geological Institute. At that event we talked to lawmakers and their staffs about the importance of the geosciences to society.

Both of these are excellent events. But DPA Washington Advocacy Group chair Deborah Sacrey, along with DPA Government Affairs Committee chair Carl Smith, GEO-DC Governance Board chair Patrick J.F. Gratton and vice chair Dan Smith, both past AAPG presidents, decided to develop an exclusive event for AAPG members.

AAPG goes to Washington: Participants in the inaugural AAPG Congressional Visits Day relax before heading to the Hill to meet with Congressional leaders and their staffs.

In keeping with our mission to inform policy with science, AAPG CVD was designed to focus on issues of interest to Congress and agencies where AAPG members have unique insight and expertise.

The issues we discussed were:

✓ The future work force needs of the oil and gas industry.

Specifically, we asked lawmakers to support the Strengthening Education and Training in the Subsurface Geosciences and Engineering for Energy Development Act of 2009, developed by the Senate Energy and Natural Resources Committee to address these needs.

We also asked representatives to consider introducing similar language in the House.

✓ The importance of the environmentally responsible development of oil and natural gas on U.S. public lands, including the Outer Continental Shelf, NPRA and ANWR. We further urged Congress to resist royalty and tax policies that discourage exploration and production of oil and natural gas on federal lands.

✓ The vital roles that federally funded oil and natural gas research and development play in fostering a vibrant domestic petroleum industry, enabling more efficient recovery of resources on public lands, and supporting the education and development of the next generation geoscience work force.

We urged Congress to appropriate $500 million for oil and natural gas R&D for fiscal year 2010.

* * *

AAPG CVD began with an orientation session for participants where we talked about objectives for our meetings, the

continued on next page

continued from previous page

issues we planned to cover and the current political and legislative landscape in Washington, D.C.

The following morning began with meetings at the U.S. Department of the Interior with the Bureau of Land Management and Minerals Management Service. During the meetings we covered the issues that we were planning to discuss with lawmakers, and the agency representatives gave us an overview of their current programs and activities.

Later that day we also met with the Department of Energy to discuss fossil energy R&D programs. The addition of federal agencies to our CVD agenda is a new feature, and one that our participants found useful.

We also spent time on Capitol Hill that day in meetings with House committee staff and the Congressional Research Service, a non-partisan research arm of the Library of Congress. They serve a very important function in Congress, which is their only client; their mission is to provide 535 representatives and senators with factual information and background on every conceivable topic of interest, including natural resources and the geosciences.

As has become tradition, the Army and Navy Club of Washington, D.C., was our base of operations for AAPG CVD, thanks to Carl J. Smith. And at the close of the first day, as also has become customary, our group enjoyed the sumptuous seafood buffet in the club's majestic dining room.

The entire second day was dedicated to meetings on Capitol Hill. Each participant had meetings scheduled with their representative and senators, or their staff. We also met with additional House and Senate committee staff handling energy, natural resources and appropriations.

Fortuitously, the Consumer Energy Alliance (CEA), a non-profit, non-partisan organization of energy and consumer organizations of which AAPG is a member, was holding its annual Energy Day on Capitol Hill on Wednesday, and AAPG CVD participants had the opportunity to attend.

CEA's mission "is to expand the dialogue between the energy and consuming sectors to improve overall understanding of energy security and the thoughtful development and utilization of energy resources to help create sound energy policy and maintain stable energy prices for consumers."

The event was hosted by Rep. Gene Green (D-Texas), Sen. Lisa Murkowski (R-Alaska) and nearly 90 other House and Senate members.

The third (very full) day started with our first meeting at 9 a.m. and ended when the last meeting concluded just before 6 p.m. All told, we had 27 meetings with legislators and staff.

Our CVD alumni, those who have attended multiple times, are now finding that staff know their names and faces when they make their visits. As a result, AAPG is increasingly recognized on Capitol Hill as a credible source of information – even more so because it is delivered by known-constituents.

That is precisely what we are trying to accomplish.

* * *

I would like to offer personal thanks to **Don** and **Cynthia Clarke** of California; **Pete MacKenzie** of Ohio; **Lee Harvard** of New Mexico; **Mary Harris** of South Carolina; **Paul Britt**, **Pat Gratton**, **Will Green**, **Larry Jones**, **John Jordan**, **Deborah Sacrey** and **Dan Smith** of Texas; **Jeff Eppink** of Virginia; and **Carl Smith** of West Virginia, for investing their time and effort to participate in AAPG CVD.

We are looking for others to join them at a future event. We are especially hoping to broaden the number of participating states. Watch here for details about upcoming CVD opportunities.

Come join us in Washington, D.C., and help us make a difference. ❑

(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.)

AAPG member Lee Harvard, left, got the opportunity to visit and talk with with his state's U.S. Rep. Harry Teague (D-New Mexico).

GEOPHYSICALcorner

Thin Is In: Here's a Helpful Attribute

(The Geophysical Corner is a regular column in the EXPLORER, edited by Bob A. Hardage, senior research scientist at the Bureau of Economic Geology, the University of Texas at Austin. This month's column is titled "Thin Is In: Here's a Helpful Attribute.")

By SATINDER CHOPRA
JOHN P. CASTAGNA
and YONG XU

And now, the rest of the story …

You may recall that a novel poststack inversion method was discussed in the May 2008 Geophysical Corner; the output from the method described in that article was a reflectivity series that had a resolution superior to that of the input data used to generate the reflectivity response.

Some applications of this inversion method were discussed in the 2008 article.

Here we illustrate another application of that 2008 reflectivity calculation that aids in quantifying numerous geological features – with the emphasis here being on thin beds.

* * *

Many flow units within reservoirs are thin layers that are below seismic resolution, because their thickness is less than one-eighth of the dominant wavelength of the illuminating wavefield, causing the unit to not be resolved seismically.

Determining the actual thicknesses of such thin layers is an important task for many geophysicists. We achieve this objective of quantifying thin-bed thickness by a two-step process:

✓ First, invert the seismic amplitudes into a reflectivity series using spectral inversion (the topic discussed in the May 2008 article).

✓ Second, transform this reflectivity series into relative impedance layers. This step is a trace-by-trace calculation process and can be computed quickly.

Impedance profiles can be represented as either absolute impedances, which have magnitudes equivalent to the magnitudes of log data measured across targeted intervals, or as relative impedances, which have arbitrary amplitudes that show depth-dependent variations equivalent to those exhibited by log data.

We emphasize here the option of calculating relative impedances.

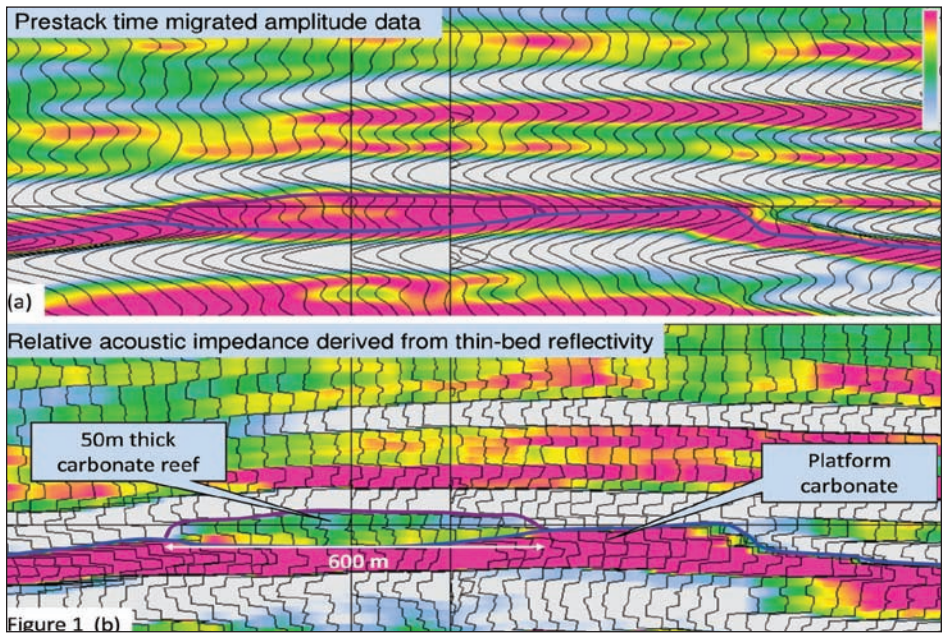
When interpreting relative impedance profiles, the top and bottom reflection boundaries of a unit are not correlated with well log curves. Instead, the thicknesses of relative impedance layers are correlated with log curve shapes.

On figure 1 we illustrate how a 50-meter thick carbonate reef can be distinguished from the base platform carbonate unit that it rests on.

As indicated on figure 1(a), the frequency bandwidth of the prestack time-migrated (PSTM) seismic data does not distinguish the reef and the platform carbonate. In contrast, thin-bed reflectivity derived from the PSTM data and then converted into relative impedance data does distinguish between the two units (figure 1b).

The lateral extent of the reef is interpreted as 600 meters.

Two wells have penetrated this gas-producing reef, as indicated by the vertical black lines, and verify this interpretation.



Data courtesy of Arcis Corp., Calgary

Figure 1 – (a) A seismic section from a prestack time migrated data volume showing a weak signature of a gas-producing reef defined by a blue horizon (bottom of reef) and a dark purple horizon (top of reef); (b) the equivalent section shows a relative impedance determined from thin-bed reflectivity. The reef shows up clearly in terms of the green color.

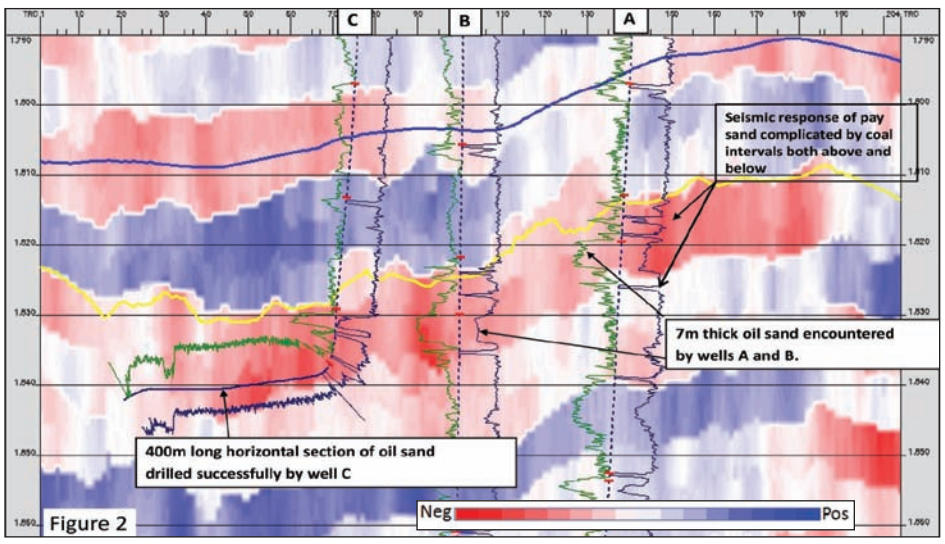


Figure 2 – A relative impedance profile calculated from thin-bed reflectivity derived from input seismic data. The log curves are sonic data (right) and gamma-ray measurements (left) at each well. Wells A and B encountered a seven-meter oil sand as indicated, but the seismic signature is complicated because of thin coal units above and below the sand. The relative acoustic impedance exhibits a pale reddish color for the oil sand and allows the sand to be tracked to the left of the profile. Horizontal well C was drilled based on this interpretation, and the horizontal section of this well penetrated approximately 400 meters of productive sand.

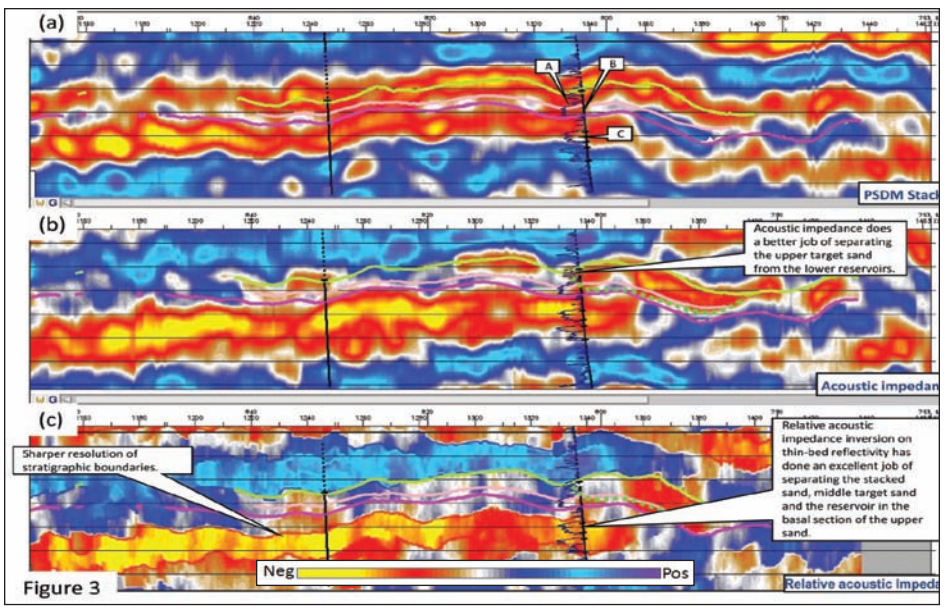


Figure 3 – (a) A seismic section of prestack depth migrated data. Reservoir sands A, B and C are indicated on the gamma-ray curve. The poor bandwidth of the seismic data does not show the individual sands. (b) Equivalent section from absolute acoustic impedance. The upper dirty sand is seen with better definition. (c) Relative acoustic impedance calculated from thin-bed reflectivity derived from seismic data. The relative acoustic impedance section has done a better job of separating the stacked sands and reveals the basal part of reservoir sand C.

* * *

Figure 2 shows a vertical section through thin-bed impedance data calculated across a Far East offshore area. This profile follows the trajectory of a horizontal oil producer labeled Well C, which targeted a seven-meter thick sand that was previously encountered in wells A and B.

This sand thickness is well below the tuning thickness of the seismic data. The seismic response is further complicated by the presence of coal units, one-meter to two meters thick, both above and below the target sand interval.

The horizontal oil producer, Well C, was positioned using the thin-bed impedance data, which showed indications of a higher quality pay sand toward the base of the low-impedance interval that is indicated.

The well encountered over 400 meters of good quality pay sand, with high net-to-gross, and stayed inside the seven-meter thick sand interval throughout its entire trajectory.

* * *

Our final example shows how relative impedance data helped to distinguish individual sands in a stacked sand sequence.

Figure 3 shows sections through:

✓ (a) A prestack depth migrated volume (PSDM), also from a Far East offshore area.

✓ (b) An absolute impedance inversion volume.

✓ (c) A relative impedance inversion data volume.

The log curve is the gamma-ray response that shows an upper dirty sand A, a middle clean sand B and a reservoir in the basal part of sand C.

The poor frequency content of the seismic data (figure 3a) limits the vertical resolution of the stacked sand sequence and gives an erroneous interpretation of the upper reservoir, the B sand. The equivalent acoustic impedance section (figure 3b) appears to have done a better job of separating the upper sand from the lower reservoirs.

Relative acoustic impedances were calculated from the thin-bed reflectivity volume, and the equivalent section shown in figure 3c shows the separation of the upper dirty sand, the middle clean sand and the reservoir in the basal part of sand C.

The stratigraphic boundary corresponding to the basal part of the stacked sands is well defined and allows for a more accurate interpretation.

* * *

Relative acoustic impedance calculated from a thin-bed reflectivity series is a useful attribute for extracting thin-bed information from seismic data. We've demonstrated this principle by this column's three examples, which show results that cannot be achieved with seismic amplitudes alone.

We recommend that relative impedance be calculated and used for both qualitative and quantitative reservoir characterization.

Finally, we thank two anonymous companies for permission to publish the examples shown here. The thin-bed reflectivity method mentioned here is commercially referred to as ThinMan™, a trademark owned by FusionGeo, Houston. ❑

(Editor's note: Chopra, an AAPG member, and Xu are with Arcis Corp., Calgary, Canada; Castagna is with the University of Houston/Fusion Geo Inc., Houston.)

The 4th Annual AAPG Fall Education Conference
September 21-25, 2009 / Norris Conference Center / Houston, Texas

10 GREAT COURSES ON THE BUSINESS OF PETROLEUM EXPLORATION.

- Risk Analysis & Decision Making in E&P
- Petroleum Resources & Reserves: An Overview of Recommended Geological Practices
- Decision Methods and LNG Value Chain
- Creativity in Exploration
- Knowledge Transfer in the Multi-Generational Workplace
- Keys to Complex Well Economic Success
- Think on Your Feet—The Importance of Clarity, Brevity and Impact™
- The Energy Industry from the Investor's Perspective: How will the new policies affect investment strategies?
- Exploration Success and Failures from Pore Pressure Assumptions
- Farm-ins and Farm-outs for Explorationists

TO REGISTER, OR FOR MORE INFORMATION, CALL 888-338-3387 OR VISIT WWW.AAPG.ORG/FEC

$1595 (AAPG Members) • $1695 (Non-Members) • Price increases $100 after August 24, 2009

Courses may be purchased individually.

www.aapg.org/fec

More science than you can shake a pick at.

REGIONS&sections

(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

The AAPG Africa Region has launched a new, distinctly African Web site, emblazoned with vibrant colors from red to yellow and blue.

The colors and newly upgraded site convey a new level of activity from the Region.

Africa's Web site will refresh quarterly and promises to deliver timely, relevant information on regional events and happenings – and it also will carry more timely information as events warrant.

"In light of AAPG's global growth, the Region leadership has made it their singular purpose to build and rebuild the Africa Region infrastructure to support high levels of inter- and intra-regional interaction," said Africa Region President James Agbenorto. "Hence, the launching of this Web site and e-newsletter has been a key action item for our Region."

The newly designed AAPG Africa Region Web site, upgraded to encourage more communication, organization and participation.

Editorial Board

Africa is the world's second largest continent in terms of geographic area. But AAPG Africa Region leaders help connect distant points on the map with representation from Morocco and Egypt in the north, Ghana and Nigeria in western and central Africa, and South Africa at the continent's southern tip.

The region's Web site editorial board members connect the diverse countries of Africa, while also bringing news from the main governing bodies of AAPG's organization.

Web site editorial board members are:

❒ **James Agbenorto**, who connects Africa Region members with information from around the world through monthly Region presidents teleconferences.

❒ **Almoundir Morabet**, a member of the House of Delegates.

❒ **Joe Ejedawe**, a member of the AAPG Advisory Council.

Among them, the three members bring news and insights from all three defined branches of AAPG governance.

Something New

There are several new features that will make the Web site an added value to members, including:

✓ A quarterly "President's Report" will give an overview of new developments and progress on the Region's business plan goals.

✓ In addition to links with Africa Region affiliate societies and student chapters, the new site will contain a calendar of regional events, Distinguished Lecturer visits, conferences and other educational opportunities listed by country.

✓ Competition details and photos from the regional Imperial Barrel Award program will be featured prominently.

✓ The new "Membership Drive" section map will illustrate the location and concentration of AAPG members in each African country.

✓ To facilitate the process of joining AAPG, membership applications and instructions for completing the application forms will be posted in English, French and Arabic.

Using WordPress software, the Web site has features that enable the editorial board to easily add and edit information found there. WordPress also features a tool that notifies users when the site has been updated.

"Region growth requires AAPG to become a local provider of conferences, products and services," Agbenorto said. "Such a move was well served by the latest 2008 AAPG International Conference and Exhibition on our continent in Cape Town.

"The Africa Region Web site and e-newsletter bring AAPG right to our member's desktop," he added.

To view the site, go to http://regions.aapg.org/africa. ❑

AAPG would like to thank the many sponsors that helped support the AAPG Imperial Barrel Award Program:

Patron - $35,000+

Titanium - $30,000

ExxonMobil

Platinum -$25,000

Schlumberger

HALLIBURTON

Bronze - $10,000

nexen

HESS

EnCana energy for people

Chevron

NIGER DELTA EXPLORATION & PRODUCTION PLC

MOSUNMOLU LTD

StatoilHydro

Iron -$5000

AERA

MOL

TOTAL

MARATHON

Amni International Petroleum Development Company Limited

CGGVERITAS

Sterling Resources

Other Sponsors -$2,500 or below

Ammonite Resources
Appalachian Geophysical Services
Anadarko
Badger Oil
Baker Atlas/Baker Inteq
The Barron Group
Billman Geologic Consultants, Inc.
Bp
ConocoPhillips
Devon
Diversified Mud Logging
EQT Corporation
e-Seis
Fixital
Fugro-Jason
GCAGS
Geosearch Logging Inc.
Goodrich Petroleum
Greg Wrightstone
Husky
Imperial
MacKenzie Land and Exploration, Ltd.
Ohio Geological Society
Pittsburgh Assoc. of Petroleum Geologists
Rhys Reese
Stone Energy
Stratagraph
Suemaur E&P
Talisman
XTO Energy

Efforts have been made to make sure all sponsors have been recognized as of print deadline, but if your company has been ommitted, please accept our apologies.

Nebraska, Newfoundland teams place

Russia Team Wins Barrel Award

By MIKE MLYNEK
AAPG Student Focus

Graduate students representing Moscow (Russia) State University claimed the top prize as winners of this year's Imperial Barrel Awards program, beating out in the finals nine other teams from geology and geophysical departments from around the world.

The competition was held in Denver, two days before the start of the AAPG Annual Convention and Exhibition.

AAPG's IBA program is an annual prospect/exploration evaluation competition among university student teams that use real data to develop and sell fictional prospects, with the top team winning $20,000 for their petroleum geoscience department.

The Moscow State student team was representing AAPG's European Region, having won the right to compete in Denver at its regional contest earlier this year in Prague, Czech Republic.

Members of the IBA winning team are Dmitry Kalmykov, Maria Oleshko, Natalia Popova, Darya Norina and Bayrta Byurchieva. Their faculty adviser is Elena Poludetkina.

Finishing second (Selley Cup winners) was the team from the **University of Nebraska**, representing the Mid-Continent Section, which earned individual medals and $10,000 in scholarship funds for the department.

Finishing third (Stoneley Medal winners) was **Memorial University** (Newfoundland), representing the Canada Region, which earned individual medals and $5,000 in scholarship funds for their department.

The thrill of victory: Members of the Moscow State University IBA team enjoy the spotlight as 2009 champions.

The remaining seven finalists (see accompanying box) each earned $1,000 in scholarship funds for their respective schools plus individual medals for themselves as IBA finals participants.

The IBA program is designed to allow teams of students the chance to evaluate the petroleum potential of a sedimentary basin and to test their creative geological interpretations. Their work must be completed in a six-to-eight week period, with results presented to – and judged by – an independent panel of petroleum industry experts.

A total of 87 teams from 23 countries received competition datasets. Last year's IBA attracted 37 schools from 12 countries, and seven universities competed in the inaugural year, 2007.

Winners were announced at the AAPG Student Reception in Denver. Other student honors and awards announced that night included:

Student Poster Awards
(Sponsored by Shell Oil)

✓ First place – **Matt Corbett**, University of Nebraska (and a member of the IBA team); $2,000 to him, $1,000 to his department.

✓ Second place – **Brian Blackstone**, the University of Nebraska (also on the

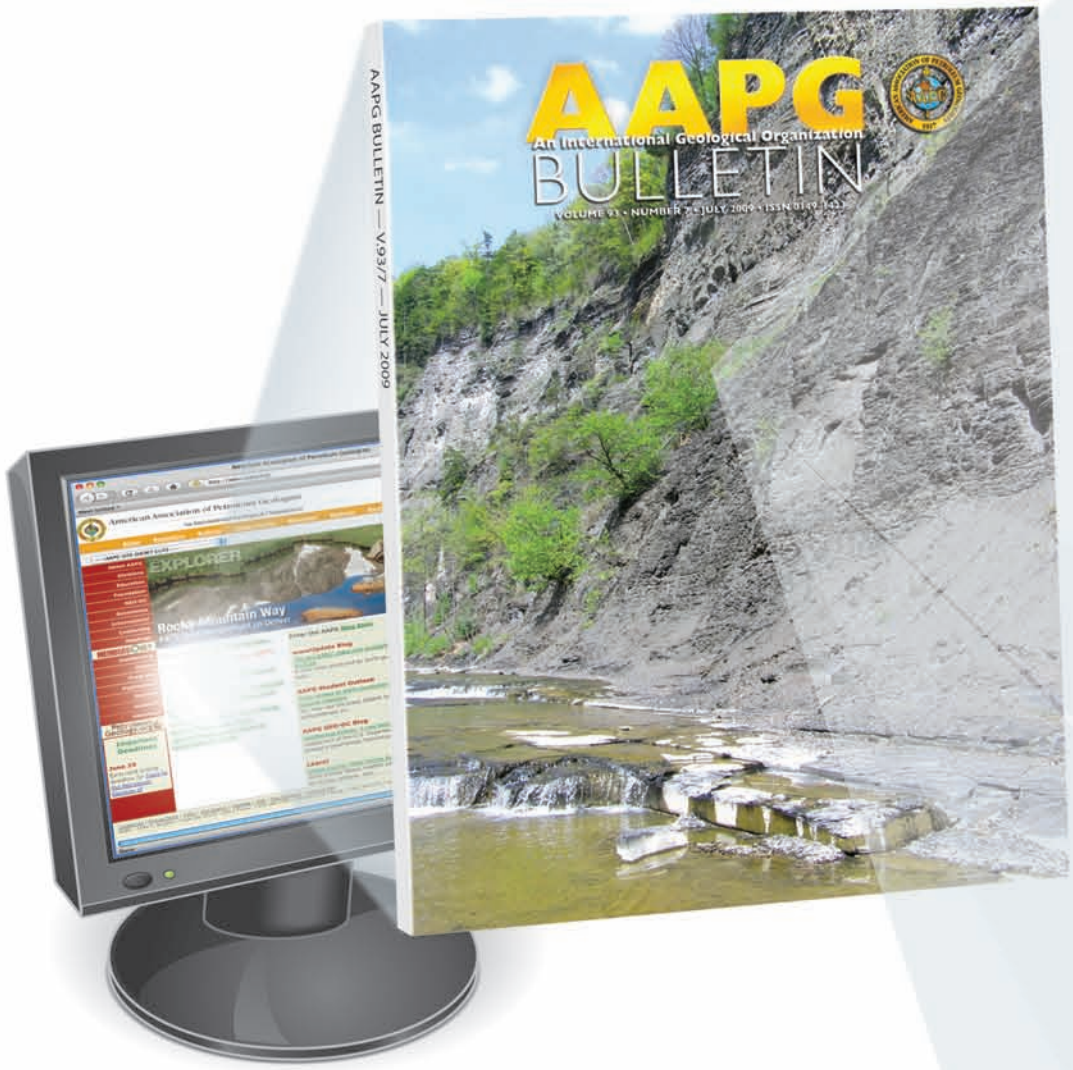
See **IBA**, page 35

IBA Region and Section Winners

Student teams from six AAPG Sections and four AAPG Regions won the right in local and regional contests to compete in the 2009 AAPG Imperial Barrel Competition in Denver. The competing teams were:

✓ Africa Region – Obafemi Awolowo University
✓ Asia/Pacific Region – Khon Kaen University
✓ Canada Region – Memorial University
✓ European Region – Moscow State University
✓ Eastern Section – University of South Carolina
✓ Gulf Coast Section – Texas A&M University
✓ Mid-Continent Section – University of Nebraska
✓ Pacific Section – San Diego State
✓ Rocky Mountain Section – University of Colorado
✓ Southwest Section – University of Texas-El Paso

Download Your NEW July 2009 Bulletin Now!



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

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

Members may access the AAPG Bulletin online at:
www.aapg.com/july_bulletin

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

Article highlights include:

Joints in the Marcellus Black Shale

Terry Engelder, Gary G. Lash, and Redescal S. Uzcátegui

Two separate joint sets in the marine Middle and Upper Devonian black shales of the Appalachian Basin benefit both horizontal drilling and subsequent stimulation within the Huron Shale. New outcrop data indicates that the same sets of joints appear to be present within the Marcellus Shale as well.

Fault Facies

Alvar Braathen, Jan Tveranger, Haakon Fossen, Tore Skar, Nestor Cardozo, S. E. Semshaug, Eivind Bastesen, and Einar Sverdrup

Realistically describing fault properties requires consideration of the entire three-dimensional fault envelope. The concept of fault facies is introduced as a means for identification and quantification of fault rock properties and distribution patterns, which are key elements for forecasting subsurface reservoir behavior.

Deformation bands may affect production strategy

Anita Torabi and Haakon Fossen

Microstructural and petrophysical variations occur in centimeter and millimeter scale in deformation bands that affect fluid flow. The amount of variation depends on the deformation mechanism and can compartmentalize reservoirs, affecting the sealing properties of faults.

Awards Presented at Annual Meeting

The Sidney Powers Memorial Award, for distinguished and outstanding contributions in petroleum geology, was presented at the AAPG Annual Meeting to Marlan W. Downey. Honorary membership was bestowed on four members, and other awards recognized achievements from the past year. Biographical sketches are presented in this issue.

Foundation Donors

The names that appear here are of those who have made donations to the AAPG Foundation in the past month—predominately through adding some additional monies on their annual dues statement.

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

With your gifts, the AAPG Foundation will continue its stewardship for the betterment of the science and the profession of petroleum geology.

The AAPG Foundation Trustees

Foundation (General)
Keith Robert Adamson
John A. Albers
Joseph L. Alcamo
Gregg Steven Alletag
Joel R. Alnes
Willis F. Ammentorp
Craig F. Anderson
Leonard McCaskie Atkins Jr.
William Augustus Atlee
Reyna Lee Austin
Jonas W. Bailey
Alfred Harry Baker Jr.
Kate Hadley Baker
Jack R. Banttari
Norman Kay Barker
Richard Samuel Barnett
Mario F. Barragan
Michael William Barratt
Stephen Francis Barrett
Dewey F. Bartlett Jr.
John R. Barwin
William Lassiter Basham
Timothy John Bennett
Henry Bercutt
In memory of Ronald Hedberg
Salman Bloch
Matthew Regis Bob
George Robert Bole
Albert S. Bonner Jr.
William Paul Bosworth
William Howard Bowie
William Franklin Boykin Jr.
Jonathan M. Brady
Lorenz M. Braren
Martin Louis Bregman
Herbert Lee Brewer
Lawrence O. Brewer
Timothy Gerard Brickner
G.W. Brock
Hilary James Brook
Hubert Leon Brown III
Arthur Charles Brunton
Leonard Elton Bryans
James George Buchanan
Christian M.E. Buck
Carl Jeffrey Burdick
Brian Dean Burgess
Mitchell Keith Burk
Stephen Michael Burke
William Charles Burkett
Ashley Nicole Byerley
Leon Geddis Byerley Jr.
Susan Kiefner Cage
Thomas Ross Cambridge
In memory of Robey Clark
Brian Stewart Carl
Alfred Townes Carleton Jr.
John R. Carmony
Stephanie M. Carney
Jack Cleveland Cartwright
Tom Ann L. Casey
Dwight Eugene Cassell
Charles A. Caughey
Arthur Lawrence Champine
John Ernest Chatfield
Bruce Ned Cheatham
David J. Christiansen Jr.
C.F. Clawson II
William Atlee Clement
David Richard Cook
Robert Loren Countryman
In memory of Russell Simonson and Bob Nesbit
James Maurice Cox
Jennifer R. Crews
Myrt E. Cribbs
Dona Long Crouch
Landon Curry
Harold E. Curtis
James Robert Daniels
Bobby J. Darnell
William James Davies
Lewis Decker Dawson
Richard Allen Denne
James Brian Dodson
Michael P. Dolan
Eloi Dolivo
Edward D. Dolly
Peter D'Onfro
Garnett M. Dow
Marlan Wayne Downey
James Alan Drahovzal
Amelia Marie Drake
Stephen John Drake
Steve Allen Drake
Gary Stuart Drummond
Louis H. Du Bois
Harvey Richard Duchene
Ralph Charles Duchin
Herbert David Duey
Steven Andrew Earle
Edwin Harris East
David Eugene Eby
In memory of Robert Goldhammer
Kim Ronald Eccles
Sven Olaf Egenhoff
Douglas Wayne Ellenor
Michael E. Ellis
James Joseph Emme
Leslie Samuels Entsminger
Carl Anthony Evans
Garth R. Evans
Michael Davis Fawcett
Leo F. Fay
Howard Feldman
Robert Bruce Ferguson
Claude David Fiddler
Joao C. A. Figueira
Jack Christopher Fikes
Jim D. Finley
Randall Jordan Fleming
Claudio Pires Florencio
Michael Alan Fogarty
Stephen K. Frazier
A. Eugene Fritsche
Jack Quentin Frizzell
In memory of Richard Bloomer
James M. Funk
Lawrence W. Funkhouser
John Anderson Gambill
Carlos Alberto Garcia
Richard Anthony Garrard
Larry R. Gaston
Eldon Michael Gath
Ronald M. Gieger
Patricia Kay Giffin
William H. Gillespie
Elliott Perry Ginger
Jerome E. Glass
Howard Bruce Glassman
Carl W. Glatz
John Maris Gobins
Frank William Godsey
Stephen M. Golas
Judd Goldberg
Landry "Lanny" J. Goodman
Peter Gordon Gray
Richard Hughes Groshong Jr.
Paula Ann Gural
Robert Thornbury Halpin
Gilmor Semmes Hamill IV
In memory of Melvin Hill
Dean Carr Hamilton
Elwood Hardman
William Elihu Harlan III
In honor of Ronald W. Harlan
Dexter Lee Harmon
Frederika Johanna Harmsen
George M. Harper
Joe William Harris Jr.
Michael Prince Harris
Sherod Alexander Harris
In honor of James Clement
John Cleveland Harrison
Douglas Stuart Hastings
Ronald Glenn Heck
John Hardin Hefner
William Arthur Heintz Jr.
W. Daniel Heinze
Donald R. Hembre
David Rex Henderson
Stewart Lawrence Henry
Jeffrey Joseph Heppermann
Donald Ernest Hibbard
In memory of Norman Foster
David R. Higginbotham
John C. Hilburn
Stephen James Hill
John D. Hills
Sumner "Dave" Hixon
Gary John Hoose
Andrew Myron Hrycushko
Robert Bruce Hunter
Gary K. Huxford
Hollie F. Irvin Jr.
Gerhard Cyril J. Jansen
James C. Janssen
Robert Mims Jemison Jr.
James William Jennings Jr.
Mark Ming-Jung Jiang
Ben Johnson III
Glenden Fordice Johnson
Michael Alan Johnson
Michael Sam Johnson
Randy Joseph Johnson
Matthew Allen Johnston
Christina R. Jones
Crandall Davis Jones
Thomas William Jones
John E. Jordan Jr.
Alexander Ronald Kaiko
Samuel Atkinson Kalmbach
Gregory P. Karp
Robert A. Kaufmann
Joe Alfred Keeling
In memory of Mary B. Keeling
Matthew Joseph Keith
William A. Keller
William Douglas Kendall Jr.
Yousif K. Kharaka
Fiona Elizabeth Kilbride
Gregory L. Kirkland Sr.
Mark Harry Koelmel
William F. Koerschner III
George M. Koratich
William Charles Kruegar
Naresh Kumar
Robert A. Kuntz
Charles W. Landmesser
Todd Philip Lannert
Laurn R. Larson
Victor Lay
Donald Clement Le Van
Ann S. Leavesley-Turpin
Peter Frank Lehle
Terry Lee Leyenberger
Henry Morris Lieberman
Adrien Lewis Lindley
Donald Michael Lipinski
David Foster List
Joshua Ryan Lively
Brent Edward Lockhart
John Patterson Lockridge
Tomas L. Loftin
Andrew M. Logan
Bobby P. Long
Robert David LoPiccolo
In memory of P.M. "Mac" Jones
Douglas M. Lorenz
James Warren Lovekin
Luigi R. MacCagnani
Steven J. Malecek
William John Malin
Keith Nicholas Mangini
Robert Louis Marin
James Ross Markello
George M. Markey Jr.
Jack Winston Marshall
John Harris Marshall Jr.
William Dustin Marshall
Ray G. Martin
Allan V. Martini
John William Mason
Kenneth Eugene Masters
Terry J. Mather
In memory of Rufus LeBlanc
David J. May
Jerry Glen McCaskill Jr.
Robert Ramsey McConnell
L.A. McCord Jr.
Mark Douglas McCuen
George Stanley McJannet
Harven Michael McKenzie
Steven Darryl McKenzie
Cameron Robert McLain
George Lee McLeod
Alan Wayne Meeks
Eric L. Michaelson
Robert Calvin Milici
David Hunter Miller
Jim Patrick Miller
Douglas Freddie Minken
Julio Andres Montano
John Edward Mooney
Judy O. Mooney
Clyde Herbert Moore Jr.
Curtis Glen Morrill
Frank Ray Moulton Jr.
Edward C. Mozley
William R. Muehlberger
Harry William Mueller III
David Stewart Muller
In memory of Robey Clark
James Howard Murphy
Sally M. Murray
William Gerard Murray
Kenneth A. Nadolny
Luis Navarro
Randy Alan Neal
Thomas Howard Neel
Kerry David Newell
Russell Howard Nordwell
Roger Kessel Nunley
James Kevin O'Connell
James Francis O'Connell
Josh Winters Oden
William Frank Oline
Richard Allen Olsen
Jack C. Pashin
Hugh Clinton Pendery
Francis Alfred Petersen
Mark Edward Petersen
James Byron Peterson
Robin L. Petrusak
Mark Ingrum Phillips
Edward Beauregard Picou Jr.
Michael L. Pierce
Richard M. Pollastro
James L. Poston
Bradford Eugene Prather
Johann-Christian Hermann Pratsch
F. Pierce Pratt
Tony M. Preslar
Ronald W. Pritchett
Michael Joseph Quinn
Robert David Rall
Gene Austin Ratcliff
Christopher Arthur Rautman
Christy Lynn Reed
Scott Cleveland Reeve
Robert R. Remy
Fritz W. Reuter
Donald Eugene Rice
Reu Cory Richards
Wade Clark Ridley
Michael Nelson Riettini
Kenneth Rigdon
Manuel Rigo De Righi
Cecil R. Rives
In memory of Robert S. Moehlman
William Arthur Robbins Jr.
Betty May Robertson
James Kirk Roche
Stanley Edmund Roe
James Palmer Rogers
In memory of James Richter
Juan Rogelio Roman-Ramos
Sigmund J. Rosenfeld
Earl Ellsworth Rossman Jr.
Lance Ruffel
Debra Rutan
PhillipL. Salstrom
Dayna Jean Salter
Phillip Salvador
Jeffrey J. Sande
Carl David Savely
James Henry Schriber
Melvin Carroll Schroeder
Thomas J. Schull
Stephen Richard Schutter
John Scott
Roy Gene Sharrock
Daniel R. Shaughnessy
Thomas Donald Sheffield
Robert Charles Shoup
Bruce R. Sidner
Rudolf B. Siegert
Mark Alan Sippel
John David Sistrunk Jr.
In memory of Ronald Ray Sistrunk
Keith Skipper
Christopher E. Slagle
Arthur Tremaine Smith
D. Craig Smith
Daniel Lester Smith
Marlis Earl Smith
Robert Ryland Smith
Thomas Ray Smith
Brian McKenzie Smyth
Roger Kenneth Soderberg
J. William Soderman
Stephen A. Sonnenberg
In honor of Robert Weimer
Dennis M. Sparks
Stephen William Speer
Dennis M. Sponable
Charles Edward Stelting
David Stelzer
Edward J. Stockhausen
Geoffrey William Streitel
Michael William Strickler
Michael L. Stults
Cynthia G. Suek
James George Sullivan Jr.
Albert Yen Sun
Arum Triantini Suryanti
Paul Joseph Szatkowski
Kevin Dean Talley
Thomas M. Talley
Dennis Allan Taylor
J. Hall Taylor
Michael Wright Taylor
Akihiro Tazawa
Donald Paul Teason
Lawrence Tedesco
James Edward Templin II
Robert Brinley Thomas
Jack C. Threet
In memory of Kathleen Anderson and Donna Edwards
Frederic August Tietz
Raymond Michael Timpanelli
James Harold Tindall
S.M. Tobing
Bill Curtis Tucker
Andrei Tudoran
Jack N. Tuller
Neil Lee Turner
Donald Allan Twaddle
Willis Woodbury Tyrrell Jr.
Jose Antonio Varela Montes
Phillip Gene Von Tungeln
Steven James Wade
Noel B. Waechter
Keith Sterman Wall
Ron F. Waszczak
Douglas Raymond Waterman
Simon Peter Waters
Abigail L. Watkins
William Gorom Watson
Gary Merton Weir
Randall Wade Wells
Edmund Gerald Wermund Jr.
James Charles West
Rolf Westgard
Delmar G. Westover
Frances Plants Whitehurst
John Michael Widmier
In memory of Hugh M. Looney
Bruce Henry Wiley
Colin Douglas Wilkinson
Jack J. Williams
Ann O. Willis
John H. Wilson II
Paul D. Wilson
Thomas Vincent Wilson
In memory of Derrell Smith
Todd Montgomery Wilson
William T. Wilson
Karrie Champneys Wood
Lawrene C. Wood
Cary L. Wright
Timothy Francis Wright
Anthony Khee Chuang Yeo
Nelson Brent Yoder
Malcolm Doyle Young Jr.
Barry Lynn Zinz

Awards Fund
William Augustus Atlee
In honor of O.T. Hayward
William Elihu Harlan III
Hugh Hay-Roe
Michael Sam Johnson
Adrien Lewis Lindley

Robert Berg Outstanding Research Award
Josephine F. Berg and Family
In memory of Robert R. Berg
James Robert Lantz

Best Student Paper And Poster Award
Yousif K. Kharaka
John Nikolai Louie
Jeroen Martien Peters
Keith Skipper
Noel B. Waechter

Carlos Walter M. Campos Memorial Award
Joao C. A. Figueira

Bernold M. "Bruno" Hanson Memorial Environmental Grant
Margaret Anne C. Rogers
John Patrick. F. Welch

A.I. Levorsen Memorial Award
Neol B. Waechter

Grover E. Murray Memorial Distinguished Educator Award
Daniel Edward Hudson Jr.

Sidney Powers Award
Lawrence Gordon
In honor of Marlan Downey

Teacher of the Year Award
Cynthia G. Suek
Steven John Williams

Bridge Fund
Texas Alliance of Energy Prod
In honor of Scott Tinker

Continuing Education Fund
Tanya Lynn Inks
Tomas L. Loftin
Gary Stuart Drummond

Daniel A. Busch Library Fund
William R. Berry II
Edward D. Dolly
Barry Martin Faulkner
In memory of Carl N. Faulkner
Jon P. Herber
David Hunter Miller
Henry S. Pettingill
Anthony Reso

Digital Products Fund
William R. Berry II
Richard S. Bishop
In honor of Marlan Downey
Paul J. English
William Elihu Harlan III
Volker Koehler
Erik A. Opstad
Henry V. Watkins Jr.

Colorado School of Mines
Timothy Lee Hoops

Columbia University
William Travis Brown Jr.

Johns Hopkins University
Charles T. Feazel

Texas A&M University
Christy Lynn Reed
Michael Nelson Riettini

Texas Tech University
Joel R. Alnes
Joe William Harris Jr.

University of Calgary
Joe William Harris Jr.

University of California, Berkeley
Yousif K. Kharaka

University of Houston
Robert James Hand

University of Missouri, Columbia
Mark Edward Petersen

University of Oklahoma
Sadanand Dattatray Joshi
Jerry Glen McCaskill Jr.

University of Utah
John O.D. Byrd

University of Wyoming
Mark A. Olson
Robert William Scott

Distinguished Lecture Fund
Philip Braithwaite
Janice M. Christ
Ronald Thomas Cramer
Robert Henry Dott Jr.
Barbara L. Faulkner
William Elihu Harlan III
Jon P. Herber
Mark Ryan Johnson
Richard A. Kopp
Morris W. Leighton
Brian Edward Lock
John Nikolai Louie
James Ross Markello
Thomas R. Marshall Jr.
John William Mason
Douglas Keene Morton
Ronald Alan Nelson
Jack C. Pashin
Herbert Mark Stanley Jr.
J. Todd Stephenson
Charles Edward Terry
Joseph Leonard Weitz

Allan P. Bennison Distinguished Lecture Fund
Alexander E. Booth
Tanya Lynn Inks

Glen Pool Museum Fund
Jerry Glen McCaskill Jr.

Grants-in-Aid Fund
Donald Wilkin Boyd
Willis Reider Brown
Gerald George Calhoun
Chevron Humankind
Amy Whitaker and Jody Gibson
Douglas Howard Cook
M.A. Custer
Joseph Andrew Dunwoody
Anne Grau
John Melvin Henton Jr.
In memory of Arthur A. Meyerhoff
G. Warfield Hobbs
Wilson Humphrey
Walter P. Kleweno
John Vincent Leone
Donald Bradford Macurda Jr.
James Ross Markello
Murray M. Matson
Piotr Karol Misiarz
Michael Joseph Quinn
Carlos Rivero
Robert Ryland Smith
Charles Edward Terry
Page Charles Twiss
In memory of Ronald K. DeFord
Charles Trevor Walker

Gustavus E. Archie Memorial International Grant
Joseph Martin Finneran

Rodney A. Bernasek Memorial Grant
William B. Walker Jr.
In memory of Rodney A. Bernasek

Norman H. Foster Memorial Grant
Randi Susan Martinsen
Noel B. Waechter

Peter W. Gester Memorial Grant
Kenneth Clark Gester

Robert K. Goldhammer Memorial Grant
Younis K. Altobi
Mashael Abdul R. Al-Wehaibi
Jennifer R. Crews
Benjamin J. Sloan

James E. Hooks Memorial Grant
Richard Allen Olsen

Frank E. Kottlowski Memorial Grant
Margaret Anne C. Rogers

R.E. McAdams Memorial Grant
Lawrence Gordon
In memory of R.E. McAdams

Gretchen Nakayama Memorial Grant
John O.D. Byrd

Donald A. and Mary O'Nesky Named Grant
Donald A. O'Nesky
In memory of Fred A. Dix

Edward B. Picou Named Grant
Bradford Eugene Prather
Nelson Brent Yoder

SEAPEX Grant
Eloi Dolivo

Ken Stanley Memorial Grant
James W. Collinson
Randi Susan Martinsen
Ralph Arthur Stone

Suzanne Takken Memorial Grant
Jerry Glen McCaskill Jr.

Donald F. Towse Memorial Grant
Margaret Anne C. Rogers

Weimer Family Named Grant
Randi Susan Martinsen

James E. Wilson Memorial Grant
Roy Oliver Linseth

James A. Hartman Student Fund
Richard Allen Olsen

K-12 Education Fund
Charles T. Feazel
John Christian Scheldt
Frank Adler
Pete C. Aguilar
Bruce S. Appelbaum
Leonard McCaskie Atkins Jr.
Frank J. Banar
William F. Bandy Jr.
John McGregor Barnes Jr.
Kenneth Earl Beeney
Mary Caroline Bentley
William R. Berry II
Dudley Wood Bolyard
Maija E.S. Brown
Kim Robert Butler
Gerald George Calhoun
Roy L. Clement
Lester Woodrow Clutter
Ronald Thomas Cramer
M.A. Custer
Paul H. Daggett
Leonard Dwight Espinosa
David Hendrix Glenn
Barry L. Gouger
David Carl Groves
William Elihu Harlan III
Andrew S. Harper
Ronald Glenn Heck
In honor of Burdette A. Ogle
James Anthony Helwig
G. Warfield Hobbs
Owen R. Hopkins
H.C. Jamison
In memory of Russell R. Simonson
Donald B. Jennings
Yousif K. Kharaka
Marthin Arthur Kopacz
Chalres W. Landmesser
Adrien Lewis Lindley
William John Malin
Kenneth Mark Mallon
Anthony Joseph Mancini
David F. Martineau
John William Mason
Amanda K. Melkert
Michael Louis Merritt
In memory of Paul H. Umbach
Eric L. Michaelson
In memory of L.H. "Mike" Michaelson
Rodney Lee Michel
Sidney Stuart Moran
Ernest R. Morrison
Brian D. Noel
William D. O'Brien Jr.
John Peter Olson
Erik A. Opstad
Jeannine A. Perrot
John M. Pezzetta
Gary Neil Polasek
Ronald W. Pritchett
Stanley Edmund Roe
In memory of Dennis Irwin
Robert R. Sartain
Robert L. Scamman
Jack W. Schanck
John Joseph Schneider
William E. Semmelbeck
William James Shaffer
Kevin Laurence Smith
John Frank Sobehrad
Robert Kenneth Steer
In memory of Robert D. Ottmann
Roger T. Steinberg
Alan H. Stevens
Albert Yen Sun
Steven A. Tedesco
Ronald E. Tepley
Jon Louis Thompson
Dennis B. Tower
Nancy Susan Vaughan
Richard Howard Vaughan
John Patrick F. Welch
John W. Wilson
Gordon K. Yahney
Gregory Phillip Yvarra
In memory of Jan Dykes
Donald Henry Zenger

Boone Pickens Digital Geology Fund
Nicholas M. Gregg
Joe William Harris Jr.
John Nikolai Louie
Margaret Anne C. Rogers

Pratt BULLETIN Fund
M.A. Custer
Barbara L. Faulkner
In memory of Gordon Moir
William Elihu Harlan III
J. Michael Lacey
Adrien Lewis Lindley
Brian Charles Mallick
John William Mason
John Sawyer Ross
Steven A. Tedesco

Publications Pipeline Fund
Martin Macdermott Cassidy

Special Publications Fund
James R. Broten
Ronald Thomas Cramer
In honor of C.P. Abrassart
Robert Henry Dott Jr.
In memory of Robert H. Dott Sr.
Harry John Hansen
William Elihu Harlan III
Hugh Hay-Roe
In memory of Ronald K. DeFord
Yousif K. Kharaka
John William Mason
In memory of Thomas R. Lyons
Bernard Wendell Reiss

E.F. Reid Scouting Fund
William A. Keller
Margaret Anne C. Rogers

Visiting Geoscientist Fund
Margaret Anne C. Rogers
Leonard McCaskie Atkins Jr.
Kenneth Thomson Barrow
Charles Samuel Bartlett Jr.
Eloi Dolivo
Michael D. Dollins
In memory of Tom Mairs
Paul H. Dudley Jr.
In honor of Jack C. Threet
Mark Ryan Johnson
John Nikolai Louie
Neil Gerard Moss
Robin L. Petrusak
Daniel Lester Smith

L. Austin Weeks Memorial Undergraduate Grant Fund
William R. Berry II
Jlynn M. Bowen
Ronald Lynn Brown
Willis Reider Brown
M.A. Custer
Janice Lorraine Hill
Leo Joseph Lammers
In memory of Lawrence E. Scott
Adrien Lewis Lindley
Brian Edward Lock
Lowell Evert Waite
In memory of Robert K. Goldhammer
Edmund Gerald Wermund Jr.

Celebrating the OSU-AAPG consortium: from left, OSU's Michael Larson, Jay Gregg, Boone Pickens, Peter Sherwood and AAPG Executive Director Rick Fritz.

FOUNDATIONupdate

By CHRISTOPHER STONE
EXPLORER Correspondent

The historic $9.4 million agreement between AAPG and Oklahoma State University to create a GIS digital geology consortium has been officially finalized.

The consortium is the result of a donation from geologist, businessman and entrepreneur T. Boone Pickens to the AAPG Foundation – a gift designated to create the first consortium of its kind, which will produce digital GIS products through OSU's geology and geography department and be made available to professionals and the public via AAPG's intranet database.

The project also will benefit students by providing industry-specific research projects, which would be published in industry-friendly formats, enhancing their skill set and boosting their desirability as graduates.

The partnering agreement was signed at the OSU campus in Stillwater, Okla., shortly before Pickens' appearance at the AAPG Annual Convention and Exhibition in Denver.

Pickens' gift comprises $240,000 per year for 10 years, plus a gift of $7 million provided in his will as a legal testament. It is one of the largest single bequeaths the AAPG Foundation has ever received.

"We were looking for a way to bring (OSU and AAPG) together," said AAPG Foundation Executive Director Rick Fritz, an OSU alumnus. "Boone's primary interest is OSU, but he's been a good, Active member of AAPG (since 1954).

"We realized the geography department had such a good GIS program we were actually looking at the time for a contractor and it was just a natural fit," Fritz said. "We went to Boone, discussed it with him and he loved the idea.

"If education is the head of any university, I think research may be the heart," Fritz continued. "All of the money in a way goes for research. A certain component goes to developing new research with the departments of geography and geology. The GIS component brings into the research the Society is doing and it is a unique opportunity between both a professional society and an educational institution.

"We look forward to a long relationship in this."

"This is huge," said Peter Sherwood, dean of OSU's College of Arts and Sciences, adding he was pleased by the interdisciplinary nature of the project.

"This will help many students," he said. "They will go into the work force with many new skills."

Pickens' bequeath, when announced last year, pushed the AAPG Foundation fund-raising campaign to $23 million toward a goal of $35 million. The Foundation supports educational, charitable and scientific objectives that directly and indirectly benefit the geologic professional and general public.

* * *

In other Foundation news, the Board of Trustees recently met in Dallas and approved funding requests for:

✓ $50,000 in support of the Santa Barbara Museum of History, to further digitizing of the late Tom Dibblee's maps.

✓ $26,154 toward distribution of framed U.S. Geological Survey "Tapestry of Time Maps" to more than 180 schools, in collaboration with the More! Rocks in Your Head program.

✓ $25,000 to support the AGI's Earth Science Week program, "Understanding Climate."

✓ $48,000 to support Oklahoma State University geological research and database construction of GIS-referenced databases by James Puckette and Jeffrey Byrnes.

* * *

The University of Kansas recently became the newest recipient of an AAPG Digital Products University Endowment Subscription through the AAPG Foundation, thanks to a generous gift from alums **Dr. and Mrs. William L. Fisher**.

The gift will provide access to AAPG's

continued on next page

PROFESSIONALnewsbriefs

Tony Albrecht, to geologist, Forest Oil, Denver. Previously geologist, BP America, Houston.

Scott C. Balke, to geomodeling director, ConocoPhillips, Houston. Previously Eldfisk team lead, ConocoPhillips Norway, Stavanger, Norway.

Pratt Barndollar, to manager-exploration portfolio and planning, Talisman Energy, Calgary, Canada.

Lindell C. Bridges, to senior vice president-geosciences, EQT Production, Pittsburgh. Previously exploration manager-Fort Worth north division, EOG Resources, Fort Worth.

Ted Cammarata has established Timberwood Consulting, Cypress, Texas. Previously production systems operations manager, Expro Group, Houston.

Fred P. Drew will retire in June as president-business development, Cliffs Natural Resources, Rio de Janeiro, Brazil. He will continue as a consultant, Latin America, South America and Denver.

James Echols, to project acquisitions manager, Magma Energy (US), Reno, Nev. Previously principal, Sidtec Services, Houston.

Sebastian Galeazzi, to head of exploration, Total Austral, Argentina. Previously exploration adviser, Patagonia Exploración S.A., Buenos Aires, Argentina.

Arvind Hareendran, to assistant vice president-geology, Adani Welspun Exploration, Ahemedabad, India. Previously chief geologist, Oil and Natural Gas Corp., Mumbai, India.

Bruce Hart, to director of shale, seal and pressure systems, ConocoPhillips, Houston. Previously principal seismic stratigrapher, ConocoPhillips, Houston.

Dan Jarvie, to visiting scientist, Institut Francais du Petrole, Rueil-Malmaison, France. Previously president, Humble Geochemical Services, Humble, Texas; adjunct professor at the Energy Institute at Texas Christian University; and affiliate professor at the University of Oklahoma.

Yousif Kharaka is the recipient of the 2009 Distinguished Service Award of the International Association of Geochemistry, for outstanding service in the geochemical community. Kharaka is with U.S. Geological Survey, Menlo Park, Calif.

Edward D. LaFehr, to general manager, Pharaonic Petroleum, BP Egypt, Cairo. Previously performance unit leader, Southern Production Business, BP North Sea, Aberdeen, Scotland.

Thomas B. Layman, to vice president geoscience-eastern division, Chesapeake Energy, Oklahoma City. Previously geoscience manager-Barnett district, Chesapeake Energy, Oklahoma City.

Lee Lehtonen, to exploration team lead-Gulf of Mexico deepwater, Nexen, Plano, Texas. Previously geoscience adviser-business development, Pioneer Natural Resources, Irving, Texas.

Andy LeRoy, to senior district geologist, Samson, Houston. Previously senior geologist, BP, Houston.

Jim M. Perkins, to consulting geologist, Retirement Inc., Katy, Texas, Previously geologist, BP America, Houston.

Mihaela Ryer, to director, stratigraphy and quantitative modeling-subsurface technology, basin and sedimentary systems, ConocoPhillips, Houston. Previously staff stratigrapher-subsurface technology, sedimentary systems, ConocoPhillips, Houston.

Wolfgang E. Schollnberger received the 2009 Heritage Award from the Offshore Technology Conference, for providing distinguished service and significant contributions to the development of offshore resources. Schollnberger, AAPG's representative to OTC from 1995-2003, is an independent energy adviser, Potomac, Md.

Dietmar "Deet" Schumacher, to director of geochemistry, Geo-Microbial Technologies, Ochelata, Okla. Previously senior director geophysics, Terralliance, Newport Beach, Calif.

Mark R. Seely, to senior district geologist, Samson Resources, Tulsa. Previously senior geological adviser, Noble Energy, Houston.

Erin M. Steele-Tilocco, to associate geologist, XTO Energy, Fort Worth. Previously associate geologist, Great Plains Exploration, Mentor, Ohio; and student, University of Akron, Akron, Ohio.

Vanon K. Sun Chee Fore, to senior geological adviser, Petrohawk Energy, Houston. Previously geologist, W.D. Von Gonten & Co., Houston.

Gabor Tari, to chief scientist for geology, OMV, Vienna, Austria. Previously exploration adviser, OMV, Vienna, Austria. ❑

(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)

continued from previous page

digital library in perpetuity through the Foundation's endowment program, providing over 600,000 pages of national, international and regional libraries with petroleum, geology and geophysics information.

For program details, contact Rebecca Griffin in the Foundation office, at 918-560-2644, or by e-mail to rgriffin@aapg.org. ❑

UPCOMING REGIONAL WORKSHOPS

PTTC TECHNOLOGY CONNECTIONS Powered by AAPG

Water/Gas Shutoff and Conformance Control—Knowing What To Do/Where

6/30 **Midcontinent** - Tulsa, OK. Contact: 918-241-5801
7/2 **Rocky Mountain** - Casper, WY. Contact: 303-273-3107

Applied Reservoir Geology for Engineers

7/9 **Texas/SE New Mexico** - Houston, TX. Contact: 512-471-0320
7/21 **Central/Eastern Gulf** - Lafayette, LA. Contact: 225-578-4538
7/28 **Eastern** - Pittsburgh, PA. Contact: 304-293-2867 x5443

Other Regional Workshops

7/8 **Rocky Mountain**: Petra Basics - Golden, CO. Contact: 303-273-3107
7/22 **Rocky Mountain**: Reservoir Fluids and Core Analyses (Core Laboratories) - Denver, CO. 303-273-3107
7/28 **West Coast**: Introduction to Petroleum Geology - Sacramento, CA. Contact: 661-635-0557

An AAPG e-Symposium

7/23 - 3D Seismic Profiles of U.S. Shale Plays
http://www.aapg.org/education/online/details.cfm?ID=44

For further information, view PTTC's online calendar at www.pttc.org/national_calendar.htm

MEMBERSHIP&certification

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

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

Information included here comes from the AAPG membership department.

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

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

For Active Membership

California
Bean, Cary Souder, Horizon Well Logging, Santa Rosa (B. Gilmour, L.S. Sutfin, S.T. Grayson); **Gulati, Sandeep**, ViaLogy, Altadena (W.L. Stapp, P.D. Forney, J. Mullins); **Stepanian, Justin Michael**, Strata-Analysts Group, Signal Hill (B.M. Barron, S.M. Testa, C.S. Salway)

Colorado
Cowing, James Howard, Rio Huerfano, Centennial (P.H. Buika, J.J. Tomanek, J.F. Peters); **Fausset, Neal Edward**, Robert J. Grundy & Associates, Boulder (reinstate); **Peterson, Christine Mary**, C.M. Peterson Geoscience, Lakewood (reinstate)

Illinois
Brenizer, Jon Shearer, Rex Energy, Urbana (S.T. Whitaker, B. Seyler, D.G. Morse)

Oklahoma
Britt, Larry K., Britt Rock Mechanics Laboratory, Tulsa (D.E. Foley, K.E. Newsham, D.R. Spain)

Texas
Combs, Jason Elbert, ExxonMobil, Tomball (S.T. Kimbrell, R.R. Beebe, M.T. Farrell); **Eichhubl, Peter**, University of Texas at Austin, Austin (S.W. Tinker, E.C. Potter, S.E. Laubach); **Fago, Thomas Arthur**, Summit Petroleum, Midland (J.M. Party, S.L. Shaw, J.E. Geitgey); **Feinstein, Mica**, Pioneer Natural Resources, Carrollton (S.D. Woods, R.D. Elmore, L.A. Grover); **Garciacaro, Emilio Jose**, StatoilHydro, Katy (P.A. Santogrossi, J.F. Blickwede, T. Veum); **Gonsalves, Christopher J.**, Shell E&P, Katy (J.D. Esquito, J. Veldkamp, R.G. Hiscock); **Hales, Mark Lewis**, self-employed, Midland (J. Bryden, R.J. Wetz, C.L. Howbert); **Konerding, Catalina**, CGGVeritas, Houston (O.M. Hassan, J.C. Fiduk, W.R. Harris); **Lanier,**

continued on next page

Certification

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

Petroleum Geologist

Texas
Noah Fishman, consulting geologist, Midland (J.M. Party, P. Scherzer, M. Weathers); **William E. Hardie**, OGX Resources, Midland (Society of Independent Professional Earth Sciences); **John L. Irvin**, Lama Energy, Midland (Society of Independent Professional Earth Sciences); **W. Hoxie Smith**, Midland College Petroleum Professional Development Center, Midland (J.M. Party, D. Harmon, S. Shaw)

GCAGS 2009 A FUSION OF GEOLOGY AND TECHNOLOGY

The 59th Annual Convention of the Gulf Coast Association of Geological Societies and the Gulf Coast Section of SEPM

The Annual Convention of The GCAGS is fast approaching. Please make your plans to attend this outstanding event.

We will be presenting an unequaled scientific program along with social events which will keep all who come to Shreveport busy and glad they came.

There will be 79 oral presentations and 12 poster sessions. The session titles are as follows:

Sunday, September 27, 2009
Haynesville & Other Shales: A Symposium

Monday, September 28, 2009
Structure & Lithostratigraphy: Old Fields and New Plays
Geology & Education - A Natural
The Geology & Evaluation of Shale Resource Plays
Visualization, Geochemistry, & Interpretation of Geologic Systems
Water Resources & Environmental Geology
Stratigraphy, Correlation, & Sedimentary Processes

Tuesday, September 29, 2009
The Wilcox - Outcrop to the Abyss
Seismic Applications &Salt Tectonics in the Gulf Coast
Gulf Coast Sedimentation & Coastal Subsidence

The Schedule of fees for the convention is as follows:

Pre-Convention Registration	$150	Academia	$75
Pre-Convention Registration	$200	Student	$25
Includes Shale Symposium		Spouse/Guest	$50
On-Site Registration	$200	Icebreaker Only	$50
Does not include Shale Symposium		All-Convention Luncheon	$40
On-Site Haynesville Shale Symposium	$100	Hard Copy of Transactions	$50

September 27-29, 2009 • www.gcags2009.com

PUBLICATIONS AVAILABLE FROM THE PACIFIC SECTION AAPG

GB79 **Deep-Water Sandstone, Submarine Canyon to Basin Plain, Western California, 2004, D. Lowe, This is an 11" X 17" Spiral-bound book with color figures, 80 p. (3rd reprint) $45**

MP47 **Stratigraphic Architecture of a Sand-Rich, Deep-Sea Depositional System: The Stevens Sandstone, San Joaquin Basin, California, 2003, M. A. Lamb, K. S. Kai, & S. A. Graham (eds.) (This is a 12" X 18" spiral-bound book with color and B/W Illustrations) $25**

MP48 **Contributions to the Geology of the San Joaquin Basin, California; 2009, L. Knauer (ed), 233 p. $45 …. *NEW BOOK!***

MP49 **Tertiary Sequences of the Central San Joaquin Basin, California: Age Control and Eustatic Versus Tectonic Controlling Factors, 2005, C.L. Johnson, R. B. Bloch & S. A. Graham, Color Poster 36 X 40". $20**

MP50 **Reflections on the San Andreas & San Gabriel Faults---Striking Contradictions to Large Lateral Offsets, 2007, R. H. Paschall & H. Walrond, 112 p. $20**

CD#1 **Collection of Papers about the Oil, Gas and Source Rock Geochemical Investigations carried out in the San Joaquin, Santa Maria, Santa Barbara, Ventura and Los Angeles Basins, California; 1980-1995, I. Kaplan (ed), 4600 p. $39**

CD#4 **Geology of Central California, 2007, Ron Crane. $39**

Contact larryknauer@chevron.com to place an order

Additional information available at www.psaapg.org

continued from previous page

Daniel Lee, Geoscience Earth and Marine Services, Houston (M.J. Kaluza, E.W. Janes, T.W. Neurauter); **Satterfield, Joseph Isaac**, Angelo State University, San Angelo (J.R. Ross, T.A. Augustin, B.R. Swartz); **Wells, Kristopher M.**, Mustang Fuel Corp., Houston (B.R. Weis, A.T. Verhulst, M.W. Smith); **Wood, Leonard Wayne**, EOG Resources, Midland (J.J. Chapman Jr., M. Emery, R.P. Richards); **Young, Joe Brian**, RK Petroleum Corp., Midland (J.M. Party, E.M. Sebring, D.L. Harmon)

Washington
Pinotti, Robert A., Puget Sound Energy, Chehalis (reinstate)

Australia
Ziolkowski, Victor, Geoenergy Exploration Consultants, Kenmore (B.J. Willis, D.B. Barrenger, S.G. Scott)

Bahrain
Al-Mahroos, Faisal Mohamed Hasan, Bahrain Petroleum Company BSC (C), Awali (I.A. Al-Ghamdi, S.R. Iyer, P.O. Yilmaz)

England
Bakhitova, Guzel Shaukatovna, ExxonMobil, Leatherhead, (P.K. Wong, I.G. Johnson, D.S. Sturgis)

Kazakhstan
Bekmasheva, Natalya, BG Group, Astana (Y. Adriasola Munoz, N. Ahmad, J.D. Argent)

Nigeria
Amayo, Francis Chucks, Shiv-Vani Oil & Gas Exploration Services, India, Effurun (A. Osadebey, E.C. Arochukwu, J.E. Ogala); **Ehighamen, Kennedy**, Shiv-Vani Oil & Gas Exploration Services, Port Harcourt (G.E. Imeokparia, D.O. Isibor, B. Lokendranath); **Lanisa, Ademola Olumide**, Andora Technologies, Lekki (A.O. Akinpelu, A.O. Adesanya, K. Koleosho); **Odebode, M-Olaniyi Oladimeji**, Obafemi Awolowo University, Ile-Ife, Osun State (reinstate); **Ofowena, Frank Ogheneovo**, Shiv-Vani Oil & Gas Exploration Services, Ughelli (O.A. Ehinola, J.E. Ogala, K. Ehighamen); **Onyeanya, Wealth Akuegbonwu**, Orion Energy Services, Lekki Peninsula (O.R. Ojo, O.E. Ajao, U.S. Udoh); **Oshinubi, Adeniyi Adewale**, Chevron Nigeria, Lagos (A.R. Ojelabi, A.O. Esan, J.M. Roth); **Sule, Tunde Usman Nurudeen**, Auchi Polytechnic, Auchi, Edo State (G.E. Imeokparia, H.M. Aliyu, J. Yusuf)

New Zealand
Harrison, Antony, OMV New Zealand, Wellington (T.M. Allan, J.M. Anderson, R.S. White)

Norway
Wilken, Manon, Acona Geo Services AS, Tromsø (D. Lundqvist, V. Kolstad, M. Vanneste)

Peru
Quinto, Juan Carlos, BPZ Exploracion & Produccion SRL, Lima (E.G. Alvarez-Calderon, C.I. Bianchi-Ramirez, M. Chavez-Cerna)

Saudi Arabia
Al-Dandani, Mohammed Farhan, Saudi Makamin Oil & Gas Services, Khobar (reinstate)

Ethics

from page 14

"It's emotion, not rational," he said, "and as a lawyer I can say it's no fun to be the object of all that fury. People are looking for an easy answer to their anxieties, so they blame it on geologists, Wall Street or whatever makes them feel better.

"If you called a congressman who railed against oil companies raising the price of oil last year and said why not give oil companies credit for oil prices coming down or maybe retract what you said on a specific day, he wouldn't talk to you," Hughes said. "There's no headline in that ... He's into what will sell on the 6 o'clock news.

One of the most evident rewards for many folks who participate in the challenging, high-risk business of finding and producing oil and gas is monetary profit, which the ordinary citizenry and the politicians routinely perceive to be excessive.

"One of the problems in the oil business is that some people make a whole bunch of money rather quickly," Hughes said. "That incites the most destructive emotion known to man, which is envy."

Over the past couple of years, the industry has focused more on getting the right message to the public, but perhaps it's time to approach this in a different manner.

"Geologists aren't necessarily good with presentations to the general public, and then they hire PR specialists who are slick but don't understand geology, oil, economics, so they're ineffectual with the public," Hughes said.

He emphasized "it's important that industry responds, and does it with simple charts, aphorisms, clarity, precision, good humor and warmth." ❑

IBA

from page 28

IBA team); $1,500 to him, $750 to his department.

✓ Third place – **Hilary Strong**, the University of Texas at Austin, Jackson School of Geosciences; $1,000 for her, $500 to her department.

✓ Fourth place – **Oliver Duffy**, the University of Manchester; $500 to him, $250 to his department.

Student paper award winners will be announced in the August EXPLORER.

Jim Hartman
Service to Students Award

✓ **Bill Hottman**, Fugro Seismic Imaging, Katy, Texas.

✓ **Sue Waters**, Shell E&P, New Orleans.

Outstanding Student Chapters
(Sponsored by Schlumberger)

✓ Southern Methodist University.

✓ The University of Bucharest.

Chapters receiving honorable mention were San Diego State University, Colorado School of Mines, Institute of Technology Sepuluh Nopember and Gadjah Mada University. ❑

READERS' forum

Cheers for the IBA

I was a participant at this year's International Barrel Award competition (see related story, page —), and I can boldly say that the objective of this program was fully achieved.

I can't begin to quantify the experience I have gained over the past four months, but I can say that I am better prepared for future challenges. The future of the oil and gas industry is indeed bright, and we'll endeavor to transfer all we have learned to upcoming teams from Africa, and also apply the knowledge to solving day-to-day problems.

Who knows, we might be able to come up with new innovations that will optimize the way E&P business is carried out globally.

Ogunsade Adedolapo
Ile-Ife, Nigeria

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.

Prudhoe: An Author Responds

Thank you for the generous treatment of my book, "Discovery at Prudhoe Bay – Oil: (March EXPLORER).

I'd like to respond to Bill LeMay's Readers' Forum letter in the May EXPLORER: I never remember meeting Mr. LeMay, and H.C. "Harry" Jamison, whose involvement with Prudhoe was longer than any other person and who was ultimately president of Arco Exploration, says:

"I have absolutely no knowledge or recollection of Bill LeMay as being involved whatsoever in our North Slope operations, or anywhere else, for that matter. I was in the exploration, land and engineering phases from the beginning."

Robert O. Anderson had a pre-publication manuscript of the story and was supporting us to the extent he gave me suggestions of potential publishers for me to contact. I was sorry that the publication was so drawn out that he never got to see the finished product.

Of course, the EXPLORER had to omit some information (found in the book). Mr. LeMay's suggestion about items the story should have covered causes me to wonder two things:

First, Mr. Anderson must not have shared the pre-publication manuscript with Mr. LeMay, because it covered the items Mr. LeMay sites as missing from the story.

Second, his comments indicate that he has not read the book, so his comments are all taken out of the in-depth context in the book.

Many individuals were among those who played a role in Prudhoe, but some who were not like to hitch their wagon to the Prudhoe Bay star.

The No. 1 Susie was covered lightly in my book, so here is that part – Harry Jamison recollects this:

"Susie pre-dated Prudhoe by two years of preparation to drill on the Slope and was part of a multi-company *federal* unit and satisfied unit and *federal* development contract obligations. Prudhoe was a later prospect on *state* lands and was a totally different play on a much larger and more complex structural and stratigraphic feature."

One may conclude anything, bur Mr. LeMay's conclusion about Susie was incorrect.

I suggest to Mr. Le May that he read the book and find that I covered his erroneous drill-rig obligation, and the Lisburne objective comments.

John M. Sweet
Boulder, Colo.

A Million Thanks

This week (mid-June) Petroleum Abstracts published our millionth abstract in Volume 49, Issue 24 of the Petroleum Abstracts Bulletin. This issue begins with abstract number 1,000,000!

Achieving this milestone was made possible by your continued encouragement and support for Petroleum Abstracts. Through our cooperative partnership AAPG has helped to make Petroleum Abstracts the world's leading information source for oil and gas exploration and production. Together we have provided services to companies, educational institutions, and organizations around the world. We share this milestone achievement with you.

We appreciate our longstanding partnership with AAPG/Datapages and look forward to our continued success in the future. As the director, let me say on behalf of the entire staff of Petroleum Abstracts and The University of Tulsa, thanks for helping us achieve this goal.

Thanks a million!

Tom Burchfield
Tulsa

McHargue Wins Pacific Levorsen

Timothy R. McHargue, with Chevron Energy Technology in San Ramon, Calif., has won the Pacific Section's A.I. Levorsen Award for best paper.

McHargue's paper was "Allocyclicity of Sediment Volume and Composition Provide the Basis for a Predictive Model of Turbidite Channel Architectures." His co-authors were Julian Clark, Andrea Fildani, Marjorie Levy, Brian Romans and Jacob Covault of Chevron Energy Technology, San Ramon, and Morgan Sullivan, Michael Pyrcz and Henry Posamentier of Chevron Energy Technology, Houston.

The Section's best poster award went to Holly F. Ryan, U.S. Geological Survey, Menlo Park, Calif., for "Tectonic Influence on the Generation of Cyclic Steps by Turbidity Currents Offshore San Mateo Point." Co-authors are Jacob Covault (Chevron Energy Technology), H.J. Lee (USGS), and C.K. Paull and D.W. Caress (MBAR Institute).

INmemory

Joseph H. Ambrister, 83
Allen, Texas, Feb. 4, 2009
Ralf E. Andrews, 79
Corpus Christi, Texas
July 7, 2008
Joe M. Birchum, 77
Edmond, Okla., April 7, 2009
William L. Brown, 75
Shreveport, La., April 5, 2008
Dennis Campbell, 60
Aurora, Colo., Dec. 20, 2008
James R. Cotton (EM '47)
Midland, Texas
James G. Curtis, 83
Tyler, Texas, Feb. 2, 2009
William E. Diggs, 77
Tulsa, April 22, 2009
Donald L. Garey, 77
Hobbs, N.M., Nov. 6, 2008
William C. Gibson, 85
Denver, April 29, 2009
William R. Goodier, 90
Littleton, Colo., Feb. 12, 2009
Jens R. Halverson, 53
Maricopa, Ariz., May 5, 2009
John O. Hawkins, 77
Houston, April 16, 2009
Lawrence E. Hoover, 82
Corpus Christi, Texas
Jan. 31, 2009
Cordell M. Johnson, 75
Oxford, Miss., April 12, 2009
Dan Kozak, 83
Midland, Texas, Nov. 27, 2008
James F. Krejci, 84
Abilene, Texas, March 18, 2009
Stanley Leventhal, 81
Houston, March 21, 2009
Wayne D. Martin, 88
Oxford, Ohio, April 17, 2009
Gerrit T. Maureau, 67
Calgary, Canada, Dec. 20, 2008
Aylmer L. Morgan III, 92
Danville, Ark., May 3, 2009
Samuel H. Norris, 77
Glasgow, Ky., April 9, 2009
Lloyd Pippin, 82
Amarillo, Texas, May 12, 2009
David E. Rieske (AS '82)
Piketon, Ohio, March 10, 2009
Robert E. Slingerland, 84
Dallas, Sept. 25, 2008
Mark H. Taylor, 48
Midland, Texas, April 15, 2009
Rodney Tucker, 80
Spring, Texas, Feb. 2, 2009
Alice E. French Weis (EM '57)
Spokane, Wash.
Richard L. Winborn, 78
Houston, April 11, 2009

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

CLASSIFIEDads

POSITION AVAILABLE

Petroleum Geologist

The North Dakota Geological Survey announces a permanent position opening for a geologist. Successful applicant will be responsible for conducting geologic studies and investigations to generate maps and reports on the oil-producing horizons in the Williston Basin of North Dakota.

Applicants must have a master's degree in geology with three years of petroleum industry experience or a bachelor's degree in geology with eight years of petroleum industry experience. Applicants should have strong written and verbal communication skills. Preference will be given to applicants with experience in reading, interpreting, and correlating petrophysical logs, describing oil well core, and generating contour maps.

The successful applicant will be hired as a Geologist III with a starting annual salary between $45,000 and $60,000 plus benefits, dependent upon the level of schooling and applicable experience. The State of North Dakota has a very competitive health insurance and retirement plan. Submit a completed State of ND Application for Employment (SFN10950), http://www.nd.gov/hrms/jobs/apps/application.htmcover letter, resume, references, and college transcripts to: http://www.nd.gov/hrms/jobs/apps/application.htm. Ms. Karen Gutenkunst, North Dakota Geological Survey, 600 East Boulevard Ave., Bismarck, ND 58505. Phone (701) 328-8000 for more information. Deadline for applications is August 15, 2009, but the position will remain open until it is filled.

If unable to fill at a Geologist III level, the job will be filled as a Geologist II which requires a master's degree in geology or a bachelor's degree in geology with three years of petroleum industry experience.

For more information about the North Dakota Geological Survey, see http://www.state.nd.us/ndgs/. The North Dakota Geological Survey is an Equal Opportunity Employer.

* * * * * * * * * * * * * * * * * * * *

Western State College of Colorado invites applications for the tenure-track faculty position of Moncrief Chair in Petroleum Geology starting January or August 2010. Teaching responsibilities include courses in an expanded petroleum geology curriculum and core courses in the geology curriculum. Requirements include a doctorate in geology or related field and a commitment to undergraduate education and excellence in teaching. For full position information and application procedures, visit http://www.western.edu/hr/jobs. Applications will be accepted until the position is filled. AA/EOE

FOR SALE

Mudlogging units with easy to learn software. Very reliable, full featured, portable units. Contact Automated Mudlogging Systems
(303) 794-7470 www.mudlogger.com

* * * * * * * * * * * * * * * * * * * *

APPALACHIAN BASIN DATABASE:
47,000+ wells reserve: prod. Decline, state: PA.
reserves@appalach.biz (412) 389-0789

MISCELLANEOUS

Want to purchase minerals and other oil/gas interests. Send details to: P.O. Box 13557, Denver, CO 80201.

* * * * * * * * * * * * * * * * * * * *

Beat The Heat

Take a working vacation in beautiful Laguna Beach, California. 3-bdrm 2-ba house with full office on quiet cul-de-sac. Easy walk to beach, shops and restaurants.

949.637.6498

WANTED

PRODUCING WORKING INTERESTS
OVERRIDES, ROYALTIES, DISPOSAL
WELLS, PIPELINES IN THE U.S.
PAYING TOP DOLLAR
QUICK CLOSINGS
OIL STATES TRADING
CALL PAUL 325-695-1329

* * * * * * * * * * * * * * * * * * * *

SAMPLES TO RENT

International Sample Library @ Midland – Formerly Midland Sample Library. Established in 1947. Have 164,000 wells with 1,183,000,000 well samples and cores stored in 17 buildings from 26 states, Mexico, Canada and offshore Australia. We also have a geological supply inventory.

Phone: (432) 682-2682 Fax: (432) 682-2718

CLASSIFIED ADS

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

Ads are at the rate of $2.90 per word, minimum charge of $60. And, for an additional $50, your ad can appear on the classified section on the AAPG web site. Your ad can reach more people than ever before.

Just write out your ad and send it to us. We will call you with the word count and cost. You can then arrange prepayment. Ads received by the first of the month will appear in the subsequent edition.

DIRECTOR'Scorner

AAPG Denver Convention: Wow!

By RICK FRITZ

Wow! That is the first thing that comes to mind when I think about this year's Annual Conference and Exhibition, or ACE 2009, in Denver.

I have attended every AAPG annual meeting since 1978 and Denver definitely ranks among the very best. General Chair Randy Ray and General Vice Chair Marvin Brittnenham led AAPG to a new level.

A more comprehensive report on Denver – and lots of photos – will be included in the August EXPLORER, but for now here's a "sneak peak" at coverage for a great meeting.

* * *

What made Denver special?

First and foremost it was the "science." We received many comments on the quality of the technical sessions even from some of the loudest critics. Technical Chair Steve Sonnenberg and Vice Chair Paul Weimer, built a very strong program.

A close second to science were the special events at ACE 2009. Here are some of the highlights:

✓ **Opening Session** – AAPG President Scott Tinker gave an inspiring speech on our profession and industry that will go down as one of the best in AAPG's history. His presentation was followed by a great awards ceremony that was highlighted by Marlan Downey receiving the Sidney Powers Award.

Fritz

What made Denver so special? First and foremost it was the science. A close second: the special events.

✓ **All-Convention Luncheon** – T. Boone Pickens was interviewed on stage by AAPG Foundation Chairman Bill Fisher and Scott Tinker, and his responses to their questions were the talk of the convention.

✓ **Halbouty Lecture** – Guilherme de Oliveira Estrella, managing director for E&P for Petrobras, provided a talk on the history of petroleum geology in Brazil that led to the sub-salt discoveries of super giant oil fields that may be two of the world's three biggest oil finds in the past 30 years.

✓ **Division luncheons** – All three AAPG Divisions had great speakers. At the DPA luncheon, Denver Mayor (and former geologist) John Hickenlooper gave a great speech with a blueprint on how to become a successful grassroots leader.

These are just a few of the highlights at the meeting; there were many others, especially excellent forums on professional careers for women, discovery thinking and global climate change.

Prior to the opening ceremony the **House of Delegates** debated several important issues on Sunday morning (see related story, page 18). One of the key issues was changing the bylaw requirement for experience for active membership from three years to one.

Scott Tinker introduced the concept of a new Global Corporate Structure for AAPG and was followed by a detailed report by past HoD chair Marty Hewitt who chaired a special Presidential Committee on that subject.

Many delegates took the opportunity to provide their opinions of the new concept. The HoD Constitution and Bylaws Committee will debate the concept and develop a final proposal to be presented to the HoD in New Orleans in nine months.

* * *

Of course, the question I receive most about the convention is "what are the numbers?"

Unofficially, we had over 7,500 total registrants! Granted, these are preliminary numbers and still need to be audited – but nevertheless, this is an amazing number for a convention held during a recession.

Success is not a ladder that can be climbed with your hands in your pocket. All the organizers for the convention deserve appreciation from the membership for their great work.

In the end all members will benefit. Many of the talks, posters and results of the meeting will be disseminated through publications, online media and other opportunities for professional development.

* * *

It's always a little sad when a great meeting is over. But now is the time to look forward.

AAPG's International Conference and Exhibition in Rio de Janeiro is only four months away, on Nov. 15-18, and all members and guests will be asked to reconvene at the next annual meeting, set in New Orleans on April 11-14.

We anticipate more great science, superb events and excellent networking. ❑

Feedback essential

DPA Goal: Bring Value to Members

By PAUL W. BRITT
DPA President

The Division of Professional Affairs has in recent years accomplished a number of tasks to benefit its members. These include:

Britt

✓ The Legislative Tracking service, available online to DPA members, that tracks state and federal legislative activity concerning, well, everything – but in particular the DPA filters it for legislation related to geology and petroleum.

✓ DPA support of the GEO-DC office, with its director, David Curtiss.

✓ The DPA Web site has a member directory where potential clients and employers can seek certified members who are available for consulting.

✓ The "Members Only" portion of the Web site has a Professional Development Hour database where members can keep up with their continuing education requirements if they also are state licensed, or are a DPA Board Certified Member.

✓ Online continuing education courses are available, free to DPA members and for a small fee to others.

And there are other features available for members. I would encourage everyone to take a look at dpa.aapg.org.

I'd like to thank all the past DPA officers and councilors for their efforts in implementing these goals.

* * *

Last year, the idea of holding Town Hall meetings was implemented. These meetings are to bring DPA functions to the local membership, to explain what is going on within the division and to present the DPA to potential new members.

The first DPA Town Hall meeting, organized by past-DPA president and current DPA Membership Chair Mike Party, was held at the Midland Petroleum Club on March 30. Drinks and hors d'oeuvres were served while attendees enjoyed mingling with friends and acquaintances, and GEO-DC's David Curtiss gave his presentation, "The Shifting Sands of U.S. Energy Policy."

The event was well attended by 78 people – 70 of whom were AAPG members, 19 DPA members and 15 who either had applied for or would like to apply for DPA membership.

Curtiss gave a great presentation that was well received, and he fielded many questions regarding activities in Washington. Those in attendance had positive comments regarding his talk and the GEO-DC office and had many questions to which David responded.

One way to increase membership in the DPA is to highlight GEO-DC office activities – and David did a great job. Energy legislation and taxation are issues that geoscientists are concerned about, because they have a direct effect on our business activities.

Town Hall meetings are being planned for the Mid-Continent Section meeting in Tulsa, and meetings are being considered this year in Denver, Houston and Dallas.

Contact your Councilor if you would like to help plan a meeting, or would like to see a Town Hall meeting held in your area.

* * *

Since July 1, 2008, we have added 19 new Certified Petroleum Geologists; two new Certified Coal Geologists; and two new Certified Petroleum Geophysicists, for a total of 23 new DPA members last fiscal year.

* * *

Our new leadership is in place: newly elected are President-elect Dan Tearpock, Vice President Michael Canich and Secretary Paul Pause. Existing board members are President Paul Britt, Treasurer Micheal Fogarty and Past-President Rick Ericksen.

New councilors are Dan Billman, Eastern Section; Bob Countryman, Pacific Section; David Abbott and Jeff Brame, Rocky Mountain Section. Present councilors are John Dewey and Mark Gallagher, Mid-Continent Section; Mike Party, Southwest Section; Tim Allen, International Regions; and Maurice Birdwell, Al Baker, David Chestain, Stewart Chuber, David Hart and Rick Nagy, Gulf Coast Section.

The DPA Council will be very active this year maintaining the existing programs and implementing new ones. The primary goal is to bring value to the division membership – and your feedback as members is essential to that success.

I encourage all DPA members to contact their councilor(s) with any comments, ideas or questions regarding the DPA.

We look forward to hearing from you. ❑