AAPG AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS, AN INTERNATIONAL ORGANIZATION

EXPLORER

MARCH 2007

2007 AAPG Annual Convention Long Beach

California Dreaming

Vol. 28, No. 3
March 2007

AAPG EXPLORER

On the cover: Venoco's Platform Gail, located about 10 miles offshore in 739 feet of water in the Santa Barbara Channel, is just one sign of the historical – and continuing – importance of oil that's found in California. The platform, which can accommodate up to 93 people at a time but can be run by as few as five, produces from the Sockeye Field. Photo courtesy of Venoco. Inset, turbidite sand beds containing Bouma Ta-Td sequences and flame structures in the upper channelized portion of a submarine fan system within the Monterey Formation. Photo by A.E. Fritsche.

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Vol. 28, No. 3
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: $45. Subscription rates for non-members: $63 for 12 issues; add $67 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.

POSTMASTER: Please send address changes to AAPG EXPLORER, P.O. Box 979, Tulsa, Okla. 74101.
Canada Publication Number 40046336.
Canadian returns to: Station A, P.O. Box 54, Windsor, Ontario N9A 6J5
e-mail: returnsIL@imex.pb.com

Photo courtesy of Destinations Magazine

The THUMS project is perhaps the most beautiful oil drilling operation to be found in North America – and it's a sight that will be in clear view for those attending the upcoming AAPG Annual Convention in Long Beach, Calif. Stories related to the meeting can be found throughout this special Convention Issue of the EXPLORER, but more specific information on THUMS can be found on page 28.

PRESIDENT'SCOLUMN

Volunteers: Good For AAPG Climate

By LEE T. BILLINGSLEY

As you can tell, this is a special EXPLORER, because it is focused on our Annual Convention and Exhibition in Long Beach, Calif., which will be held April 1-4.

Last year my wife, Joanne, and I had a chance to tour the Long Beach hotels, convention facilities, area restaurants and attractions, and we are very excited to return for the convention. AAPG has a dedicated group of Pacific Coast Section members that have put together a fantastic meeting for us in one of the most beautiful natural settings.

Of course, it is especially beautiful because Long Beach is such an oil town. It sits on top of the Wilmington Field, which has produced 3.5 billion BO, and 1,400 wells still produce about 40,000 BOPD.

During our visit I noticed some unusual islands in the harbor that looked man-made, yet attractive. I finally noticed a workover rig between the palm trees and realized that the islands contain some of the field wells. (See related story, page 28.)

So set out your sunglasses and sunscreen and start getting "pumped up" to join us in Long Beach. You just may run into the "Governator."

* * *

During my tenure as president I have received correspondence from members on various topics – but the two largest volume topics have been the proposed "graduated dues" structure and AAPG's current position on global climate change.

Billingsley

Members have threatened to not renew their memberships if the graduated dues system is passed, or if AAPG does not alter its position on global climate change (although not the same members). And I have been told of members who already have resigned in previous years because of our current global climate change position.

My response is: You have a much better chance of changing AAPG from within than from without. It sounds like the old saying, "Don't throw the baby out with the bath water."

Concerning the proposed graduated dues structure, I firmly believe it is an improvement for AAPG. What if the House of Delegates does not pass it by the required two-thirds majority? I certainly will not resign my membership. Instead, I will support other ideas to make AAPG membership more

See **President**, next page

AAPG Candidate Balloting Opens

Online voting opened March 1 and 2007 officer candidate paper ballots have been mailed.

Biographies, pictures and statements from all candidates for AAPG office are also available for viewing on the AAPG Web site, www.aapg.org.

The candidates responded briefly to the subject: "Why I Accepted the Invitation to be a Candidate for an AAPG Office."

Responses and biographical information were provided by each candidate and edited only for grammar, spelling and format.

This information also appeared as a hardcopy insert in the January EXPLORER.

Online balloting will be available thru midnight, May 15. Ballots will be counted on May 16. ❑

Ad Hoc Panel to Study Climate Policy

The global climate change ad hoc committee consists of:

✓ **Jay Gregg** (chairman) – Holder of the V. Brown Monnett Chair of Petroleum Geology and head of the geology department at Oklahoma State University. In 2005, Gregg took part in the Integrated Ocean Drilling Program Expedition in the North Atlantic to core the Upper Cenozoic, deep, cold water coral/mud mounds, researching the petrology and diagenesis of these sediments.

✓ **Lee Gerhard** – Retired director of the Kansas Geological Survey and professor at the University of Kansas; past president of the AAPG Division of Environmental Geoscience; co-editor of AAPG Studies #47 *Geological Perspectives of Global Climate Change.*

✓ **Eugene Shinn** – Formerly carbonate research geologist with the U.S. Geological Survey; presently consultant and courtesy professor at the College of Marine Geology, University of South Florida.

✓ **Charles Groat** – DEG president-elect, former head of the U.S. Geological Survey and current director for the Center for International Energy and Environmental Policy, and holder of the Jackson Chair of Energy and Environmental Resources, University of Texas at Austin.

✓ **Art Green** – Of Gig Harbor, Wash., retired, former Exxon chief geologist and a 2004-05 AAPG Distinguished Lecturer on "The Dynamics of the Sun/Earth Climate System."

✓ **Isabel Montenez** – Professor at University of California at Santa Cruz, a past AAPG Distinguished Lecturer and recent co-author for the paper on paleoclimate determination in Permian. Her lecture topics were "Evolution of Strontium and Carbon Isotope Composition of Cambrian Oceans: Potential for Tectonic, Paleoceanographic and Biogeochemical Events" and "Evolution of Permian Atmospheric CO_2 and Western Equatorial Pangean Climate as Recorded by Paleosol Morphologic and Geochemical Proxies."

✓ **Eric Barron** – Dean, Jackson School of Geoscience, University of Texas at Austin, and former director of Penn State University's EMS Environment Institute. He has chaired several national research boards, including the Board on Atmospheric Sciences and Climate of the National Academies. ❑

President

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affordable to low-income geologists – or support graduated dues in future years.

It's OK to throw out the dirty bath water, but be careful with the baby!

* * *

This year's Executive Committee has listened to members' views on global climate change, and we have appointed an "all-star," balanced committee to recommend a set of facts on global climate change (see box above).

As stated in my January President's Column, this committee's work should result in a set of facts on climate change that will replace the current position paper and that can be distributed at member's request in the form of a pocket-sized card. This change is occurring because we are listening to AAPG members, not because we are listening to members of other organizations.

Appointing the ad hoc global climate change committee was one of my most important tasks this year as president. I relied upon the wisdom of the Executive Committee, but also DEG President Jane McColloch and DPA President Rich Green. Every member I asked to serve on the committee agreed because it is such an important issue to him or her, and they want AAPG to "get it right."

Why is AAPG's position on climate change so important?

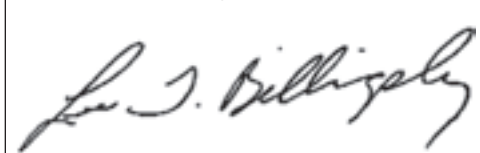
✓ Members need facts to communicate with their own communities, newspapers and government officials as debate on climate change policies intensify both in the United States and globally. Global policy makers need our geologic input to make scientifically sound decisions.

✓ The current policy statement is not supported by a significant number of our members and prospective members.

AAPG is indebted to this dedicated committee, and we are anxious to see their recommendations.

Being president of AAPG is challenging and consuming, but the attitude and help from volunteer members make it all worthwhile.

See you in Long Beach,



Annual Convention Starts April 1

Long Beach Offers a Lot of Firsts

By VERN STEFANIC
EXPLORER Managing Editor

California, here we come.

For the first time in over a decade, AAPG is returning to southern California for the 92nd Annual Convention and Exhibition, which will be held April 1-4 at the Long Beach Convention Center.

Built around the theme "Understanding Earth Systems – Pursuing the Checkered Flag," Long Beach has attracted more than 1,000 oral and poster presentations spread out over 11 themes that are diverse and global in scope.

Included in that total are eight forum or special sessions, plus the annual Michel T. Halbouty Lecture at 5:10 p.m. Monday, April 2, which this year will be Kurt Rudolph's talk (see page 22) on "Current Petroleum Exploration Trends: Prudent Investment or Irrational Exuberance?"

Add to that the various luncheon speakers, a large exhibits hall filled with the latest in information and technology plus a large array of short courses and field trips, and convention organizers say you have the setting for a superb conference.

"The technical program is the foundation of the meeting – I believe that (it) is one of the strongest in years," said meeting general chair Dalton Lockman. "Those attending will find information about new technologies, exploring new basins and developing strategies to maximize production and reserves."

He added that the technical sessions, field trips and meeting venue offer "a once-in-a-lifetime opportunity that cannot be duplicated.

"We have linked most of the field trips to technical sessions to provide a comprehensive learning experience," Lockman said. "California provides a laboratory in its backyard where world-class outcrops and analog exposures abound.

"Seeing the rocks is still the most effective way for a geoscientist to gain an in-depth understanding of the earth systems we think about on a daily basis.

"For example," he continued, "if deep water clastics are the focus of your work, you could start your convention by taking a Saturday pre-convention field trip to view sedimentology and facies architecture of channelized slope deposits 50 miles from the convention center. On Sunday you could view cores from multiple deep water reservoirs … and on Monday you could then immerse yourself by attending all or some of the 22 technical sessions (oral and poster) focused on deepwater reservoirs.

"To put the icing on the cake you could conclude your convention experience by heading back to the field for five days and view the outstanding deepwater facies outcrops California has to offer," he said.

Plenty of Highlights

The convention officially starts at 4 p.m. Sunday, April 1, with the opening session, featuring AAPG President Lee Billingsley's address plus the presentation of AAPG honors and awards, when Arnold Bouma will receive this year's Sidney Powers Memorial Award (see page 16).

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

As Lockman and others said, there are other "must see" events as well, including:

✓ The Career Center will offer a variety of tools and special events for attendees to connect to employment opportunities, including an April 1 seminar on "How to Be An Independent Geologist."

✓ This year's student poster sessions will provide the greatest student participation in the history of the annual meeting.

✓ End-of-day refreshments will be offered at 4:30-5:30 p.m. both April 2-3 in the exhibits hall.

✓ "Music and Mayhem" is the Tuesday night social activity, when attendees have an exclusive night of music, food and fun at Long Beach's popular Blue Café.

✓ This year, the meeting will have an official ending: The Sundowner Reception will be held Wednesday at 5-6:30 p.m. on the convention center's promenade patio, overlooking the Pacific Ocean.

This year's convention marks the first time Long Beach has served as the site for an AAPG annual meeting; Los Angeles has been the host on six previous occasions, and Anaheim was the site in 1973. AAPG's most recent California-based annual convention was the 1996 meeting in San Diego.

Detailed convention information and registration instructions can be found online at www.aapg.org. ❑

Update: Hotel Rooms Are Going Fast

Still waiting to start your engine on preparing for the AAPG Annual Convention?

Here's a hint: Don't wait too much longer to put the pedal to the metal.

With registration for the Long Beach meeting roaring off to a fast start, the AAPG housing block was about to get "lapped." In other words, the rooms were gone.

However, AAPG has contracted for additional rooms at other hotels for the convenience of the attendees, so we're all still in the race for rooms.

To reserve a room, either refer to the Housing Reservation Form from the convention announcement that was mailed to members in January, or download the form from the AAPG Web site at www.aapg.org, and fax to (330) 963-0319.

See you at the finish line. ❑

Photo courtesy of the Long Beach Public Library Collection

Photo by QT Luong

Those were the days: The Signal Hill oilfield at Atlantic and 28th Streets, circa 1930 (above left), was an urban forest of drilling rigs – and a testament to the historic importance of oil in California. To the right, the proud tradition of exploration and production in California continues.

Urban Oilfields in Disguise

Oil Flows 'Confidentially' in L.A.

By BARRY FRIEDMAN
EXPLORER Correspondent

Petroleum is serious business in California and is as much a part of the state's genealogy as starlets, freeways and movie stars turned governors – maybe more so.

In fact, the petroleum industry has been California's number one export through the years and historically the most profitable industry in the southern part of the state.

Correcting what he thinks is the common misconception of what made California what it is, Stephen Testa, executive officer of the State Mining and Geology Board of California, says, that "the great city of L.A. was built on oil – not gold or the entertainment industry."

Further, Testa, who has taught hazardous waste management, geology and mineralogy at California State University at Fullerton and petroleum environmental engineering at the University of Southern California, says the discovery of the oilfields in Los Angeles was the single most important moment in the history of petroleum in California.

It is a history filled with prostitutes, charlatans, extortionists and robber barons – as well as some really unsavory characters.

Not surprising, then, that the relationship between the state and oil has always been somewhat ambivalent.

As attorney for the petroleum industry, Bruce Webster, once commenting to *Los Angeles* magazine about an oilfield, said, "They ruined a perfectly good oilfield by building a city on top of it."

Boom Times

It started with a bubbling crude, as the noted oil expert Jed Clampett once explained.

Seeps were many and indigeneous people used the tar to waterproof their canoes. The most famous seep was found in La Brea, in the southern part of the state, which for thousands of years had trapped animals looking for food.

There were four distinct periods in the early history of California oil, all of which were steps in the path to the state's modern industry standing:

✓ The early reconnaissance (1849-64).

✓ California's initial oil boom (1865-66).

✓ The doldrums (1866-75).

✓ The revitalization period (1875-1900).

The discovery and development of the Los Angeles City oilfield in 1892 would lead to the discovery of numerous other fields throughout the Los Angeles Basin. During the early 1920s California became the most oil productive state in the country, and by 1923 one of every five barrels of oil produced in the United States was extracted from the Los Angeles Basin.

Over 3.4 billion barrels of oil have been produced from fields in the LA Basin since the first discovery.

While there had been some drilling in the north of the state near San Francisco, the major action was down south.

In 1892, two mineral prospectors named Edward L. Doheny and Charles A. Canfield were in the downtown area of Los Angeles when they saw the wheels of their cart were coated in tar.

Doheny and Canfield soon discovered the Los Angeles Field after drilling to a depth of 140 meters (460 feet) at the corner of Colton Street and Glendale Boulevard, near present day Dodger Stadium. The story is they used what for the time was considered state of the art technology – the sharpened end of a eucalyptus tree.

Within two years of their find, 80 wells were producing oil in the area. By 1897, the number of wells increased to 500.

Doheny, who would soon become a millionaire, is perhaps best known for his involvement in the Teapot Dome Scandal, an oilfield in Wyoming that involved questionable dealings between the Department of Interior, the sitting Wyoming senator and Doheny, who was eventually acquitted.

The most successful oilman of the time, though, wasn't really of oil and wasn't a man; Emma Summers, a music teacher, was an investor, and by 1900 she controlled half the production in the original Los Angeles Field. She became known as "California's Petroleum Queen."

In 1900, four million barrels were produced. By 1910 the figure had grown to 77 million barrels. Then, inexplicably, production slowed, until three major fields were discovered in rapid succession – Huntington Beach (1920), Santa Fe Springs (1921) and the biggest of them all, the Signal Hill (or Long Beach) Field in 1921.

Time magazine wrote in 1926:

The Standard Oil Co. of California is a complete cycle in the oil industry. It is the largest individual producer of crude oil in the U.S. and dominates the marketing of petroleum products along the west coast of both Americas.

An Uncertain Future?

As colorful as its history was, petroleum in California – particularly southern California – has always been a tough love for the communities in which it operated.

The population of the city of Los Angeles doubled between 1890 and 1900, then tripled again between 1900 and 1910. As people and industry jockeyed for land, an uneasy peace was agreed to. In the 1930s and '40s, to appease residents who neither liked the

See **California**, page 10

AAPG members Steve Testa and Robert Hatcher Jr. will lead the AAPG Annual Convention's "History of Petroleum Geology Forum: Contributions of Southern California to Petroleum Technology and Development," from 1:30-3:30 p.m. Sunday, April 1, at the Long Beach Convention Center.

This year's history forum, now a regular Sunday event during the annual meeting, will focus on southern California – notably the Los Angeles Basin and the important role this area has played in the development of the petroleum industry.

Speakers will chronicle the role and impact our understanding of geoscience and engineering and technological development has played in the development of Southern California's urban oil fields.

The forum will end in time for the meeting's opening session and awards ceremony, which will be held nearby in the LB Convention Center.

The colorful tower might look like just one more random art piece in Los Angeles, but it really is Venoco's "Tower of Hope," a drilling rig cover whose design is based on the drawings of children. Clearly, oil has a beautiful presence in Los Angeles.

Photo courtesy of Department of Oil Properties, City of Long Beach

Judges Needed for Long Beach

There are a couple of questions that arise around AAPG convention time, and both deserve an answer.

✓ Question #1 – How can I get involved?

✓ Question #2 – How can I "give back" to the profession?

There is one answer for both: Volunteer to be a judge at the Long Beach meeting.

It is an important job *and* it is a chance to "give back." The job rewards excellence, helps promote competence – and boosts the profession.

The service will last for just one session (or more, if you like) and you will have the satisfaction of accomplishing, helping to make a difference and you being involved in a scientific, worthwhile exercise. You'll meet some new colleagues as well.

On a personal note, here is a comment from Patrick T. Gordon, exploration manager for Gaither Petroleum in Houston:

"In San Francisco in June 1981, while a geologist for Gulf Oil in Midland, I gave an oral paper on a Texas Gulf Coast gas field at a session chaired by Michel Halbouty. Although I did not win the Matson best paper award, I was asked by the awards chairman if I would like to give the talk again at the SEG convention in Los Angeles that fall at the 'Best of AAPG' session.

"Obviously, the judges thought well of my paper. So I got a second free trip to sunny California, and had a great time. Soon after, I was contacted by Tom Barber, Halbouty's general manager, asking me to come back to Houston to work for them. That was one of the best moves I ever made.

"I owe it all to the hard-working judges who thought well of my oral presentation. Thank you."

To become a judge, make a notation on your registration. If you already have registered, contact Terri Duncan at (800) 364-2274, ext. 641, or at tduncan@aapg.org. ❑

Photo by W.F. Guerard Jr.

Drilling with a flair: When people think of California they often think of doing things with a creative touch – and that goes for the oil industry, too. Above, an artistically painted pumping unit in the Coalinga oilfield, Fresno County, California.

California

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noise, sight or smell, wells were soundproofed with vinyl-coated glass cloth with one-inch sheet fiberglass filling to decrease the noise.

As the state's population exploded in the second half of the century, architects had to find even more ways to camouflage the drilling for petroleum products – and are still finding them today.

According to Susanne Garfield, media and public outreach director of the California Energy Commission, the latest 2006 Energy Information Administration figures indicate California ranks third in the nation among oil producing states – behind Texas and Alaska – if offshore operations are excluded.

It ranks fourth overall (behind Louisiana, Texas and Alaska) when offshore operations are included.

Still, the state last year had to import about 42 percent of its oil from foreign countries.

Today, California refines more than 1.9 million barrels of crude per day, ranking it third highest in the nation. Not surprisingly, considering its nearly 30 million people, the state ranks first in the United States in gasoline consumption and second in jet fuel consumption.

Testa, who also is president and founder of Testa Environmental Corporation, believes the problems that the industry and the state face now will be those they face 50 years from now.

"It's a green state (actually the southern portion is rather brownish and dry), but who's taking notes?"

Apparently voters.

California is the only oil producing state that does not collect drilling royalties, so a bill was proposed last year, Proposition 87, that would force oil companies to pay taxes for drilling privileges until the state raised $4 billion, which was to be used for alternative fuel research.

You would think that California, known for its eco-friendly environment and ferocious green movement, would have passed the measure overwhelmingly – especially considering oil company profits of the past year or two.

The same electorate, though, which requires oil producers to plant palm trees and install night lighting to hide their wells and derricks, defeated the measure handily.

As to whether the best, brightest days are ahead or behind California's petroleum industry, Testa is philosophical.

"Let's just say the bulb still works when you flip the switch." ❑

33 Honored in Long Beach

Bouma Leads List of Awardees

Arnold H. Bouma, a much honored and internationally respected geologist with a sequence named in his honor, heads the list of those who will be honored at the AAPG Annual Convention in Long Beach, Calif.

Bouma, an adjunct professor at Texas A&M University, is this year's recipient of the Sidney Powers Memorial Award, and one of 33 people who will be honored by the Association at this year's awards ceremony.

The ceremony is part of the meeting's opening session, which will begin at 4 p.m. Sunday, April 1, in the Long Beach Convention Center.

The session also will include a pre-show multi-media look at the geology, history and current petroleum industry activity of Long Beach and the surrounding region; welcoming remarks from General Chairman Dalton Lockman; the presidential address from Lee Billingsley; and remarks from Bouma.

AAPG awards, approved by the Executive Committee, are presented annually to recognize individuals for service to the profession, the science, the Association and the public.

As a recipient of the Powers Medal, Bouma is bestowed the Association's highest honor (see related story, page 16).

In addition, this year's slate of honorees includes a new award – the inaugural Michel T. Halbouty Outstanding Leadership Award, approved earlier in 2006 by the Executive Committee to honor those who have provided excellence in Association leadership.


Bouma


Amoruso


Dolly


Downey


Smith


Steward


Adesida


Guzman


Hurst


Lorenz


Mason

Receiving the inaugural Halbouty Outstanding Leadership award is **John Amoruso**, of Amoruso Petroleum in Houston, an AAPG Honorary member, former AAPG president and member of the AAPG Foundation Corporation (see related story, page 18).

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

Those award winners approved by the Executive Committee and who will be honored along with Bouma and Amoruso in Long Beach are:

Honorary Member Award

Presented to members who have distinguished themselves by their accomplishments and through their service to the profession of petroleum geology and to AAPG. This year's honorees are:

❒ **Edward D. Dolly**, The Houston Exploration Co., Denver.

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❒ **Marlan W. Downey**, Dallas.
❒ **Daniel L. Smith**, Sandalwood Oil and Gas, Houston.

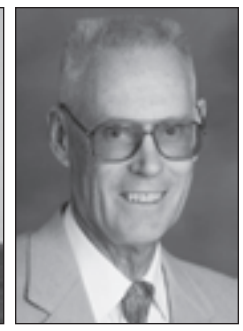
Outstanding Explorer Award
Presented to members in recognition of distinguished and outstanding achievement in exploration for petroleum or mineral resources, with an intended emphasis on recent discovery.
❒ **Dan B. Steward**, Republic Energy, The Woodlands, Texas.

Distinguished Service Award
Presented to those who have distinguished themselves in singular and beneficial long-term service to AAPG. This year's honorees are:
❒ **Adekunle A. Adesida**, Shell Petroleum (Nigeria), Lagos, Nigeria.
❒ **Alfredo E. Guzman**, Pemex, Veracruz, Mexico.
❒ **Andrew Hurst**, University of Aberdeen, Aberdeen, Scotland.
❒ **John C. Lorenz**, Sandia National Laboratories, Albuquerque, N.M.
❒ **Erik P. Mason**, Shell Oil, Katy, Texas.
❒ **Valary L. Schulz**, Matador Resources, Dallas.

Grover E. Murray Distinguished Educator Award
Presented for distinguished and outstanding contributions to geological education, both at the university level and toward education of the general public. This year's honorees are:
❒ **Janok Bhattacharya**, University of Houston, Houston.
❒ **A. Eugene Fritsche**, retired (emeritus – California State University at Northridge), Winnetka, Calif.


Schulz


Battacharya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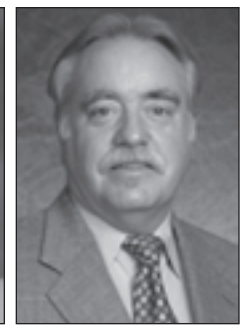
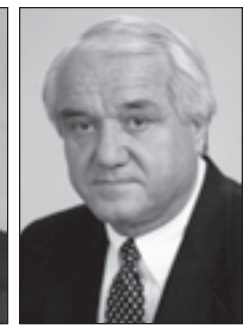

Graham


Fritz


Milling


Flawn


Gerhard


Warner


Hunt


Mitra

❒ **Stephan A. Graham**, Stanford University, Stanford, Calif.

Special Award
Presented to individuals and organizations whose area of work may not qualify for one of the existing awards, but are worthy of Association recognition. This year's honorees are:
❒ **Richard D. Fritz**, executive director, AAPG, Tulsa.
❒ **Marcus Milling**, executive director, American Geological Institute, Alexandria, Va. (Posthumous)

Public Service Award
Presented to recognize contributions of AAPG members to public affairs – and intended to encourage such activities. This year's honorees are:
❒ **Peter T. Flawn**, retired (president emeritus, the University of Texas at Austin), Austin, Texas.
❒ **Lee C. Gerhard**, Thomasson Partner Associates, Lawrence, Kan.
❒ **Edward M. Warner**, Expedition Oil, Denver.

Pioneer Award
Presented to long-standing members who have contributed to the Association and who have made meaningful contributions to the science of geology. This year's honoree is:
❒ **W. Herbert Hunt**, Petro-Hunt, Dallas.

Wallace E. Pratt Memorial Award
Presented to honor and reward the author(s) of the best AAPG BULLETIN article published each calendar year.
❒ **Shankar Mitra, Gerardo Correa Figueroa, Jesus Hernandez Garcia** and **Antonio Murrillo Alvarado**, for "Three-Dimensional Structural Model of the Cantarell and Sihil Structures, Campeche Bay, Mexico," which appeared in the January 2005

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Awards

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BULLETIN. All are with the University of Oklahoma, Norman, Okla.

Robert H. Dott Sr. Memorial Award

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

❒ Amos Salvador, for AAPG Studies 54, *Energy: A Historical Perspective and 21st Century Forecast*. Salvador is with the University of Texas at Austin, Austin, Texas.

George C. Matson Award

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

❒ Steven H. Brachman, for "Integration of 3-D Seismic With Geologic Knowledge Can Detect Non-Amplitude Combination Traps and Discover New Pay Zones in the 600 BCF Mature Play, Northern Lafourche Parish, Louisiana." Brachman is with Pogo Producing, Houston.

Jules Braunstein Memorial Award

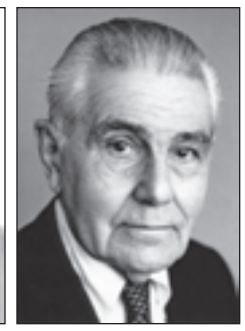
Presented to honor and reward the best poster presentation at the AAPG Annual Convention in Houston.

❒ George W. Shurr, Thomas Haggar and Sarah A. Chadima, for the poster "Exploration Strategies for Ultra-Shallow Microbial Methane on the Eastern Margin of the Williston Basin." Shurr is with GeoShurr Resources, Ellsworth, Minn., and Haggar and Chadima are both with the South Dakota Geological Survey, Vermillion, S.D.


Figueroa


Garcia


Alvarado


Salvador


Brachman


Shurr


Haggar


Chadima


Economides


Kinney


Cowdery

Geosciences in the Media Award

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

❒ Michael J. Economides, a prolific author with 11 books either authored or co-authored to his credit, and with two more books in press; honored for his most recent best-seller, *The Color of Oil*. Economides is a professor at the Cullen College of Engineering, University of Houston.

He will be the featured speaker at the All-Convention Luncheon at this year's AAPG Annual Convention in Long Beach, Calif. (see related story, page 24).

Gabriel Dengo Memorial Award

To honor and reward the best paper from the AAPG International Conference and Exhibition in Perth, Australia.

❒ Dale A. Leckie, with Nexen Inc., Calgary, Canada, for "Sequence Stratigraphic Controls of Reservoir 'Sweet Spots' in Coastal and Shelf Deposits – Cretaceous Guadalupe Formation, Colombia."

Leckie's co-authors were Elvira Gomez and Miguel Jose De Armas, both with Nexen Inc., Bogotá, Colombia.

Ziad Beydoun Award

To honor and reward the best poster presented at the Perth meeting.

❒ Jonny Wu, department of geology, Royal Holloway University of London (UK), for "4-D Analogue Modeling of Transtentional Pull-Apart Basins."

House of Delegates Honorary Membership Award

The House's highest honor, presented in recognition of consistent, dedicated and exemplary service to the HoD.

❒ Edward D. Dolly, Houston Exploration, Denver.

House of Delegates Distinguished Member Award

❒ Carroll L. Kinney, Edmond, Okla.
❒ Robert D. Cowdery, Wichita, Kan.❑

‘Milestone’ Finding Launched Career

Bouma’s Sequence Was Just a Start

By DENNIS KING
EXPLORER Correspondent

Rocks always held a special fascination for young Arnold Bouma as he wandered around the natural-gas rich fields near his hometown of Groningen, The Netherlands, turning over stones and puzzling at their shapes and composition.

But it was at the side of a most unlikely mentor that the teenage Bouma got his first insights into the deeper mysteries of geology and learned he could actually make this earth science his life’s work.

“I guess you could say my first teacher was a local gravedigger,” said Bouma, this year’s AAPG Sidney Powers Medalist. “He was a most fantastic person with only two years of schooling, but he always kept a bucket of rocks that he’d found in his work.

“He was well known by the local professors, who sometimes came to him to see what he had collected,” Bouma recalled. “I helped him and we found some of the most beautiful rocks filled with fossils, all Paleozoic.”

From that primary, down-to-earth beginning, Bouma went on to become, in the words of his Powers citation, “an extraordinary geoscientist, a prolific author and editor, an educator committed to the highest standard of teaching and a researcher who advanced the geocommunities’ knowledge through his innovation, creativity and tireless contributions to deep-water sedimentology and stratigraphy.”

Bouma’s 1962 research findings identified a sequence for dividing deep-water turbidites into intervals – which later came to be known as “the Bouma Sequence” – was, the citation states, “truly a geological milestone of the 20th century.”

“I honestly don’t know how it came to be called the Bouma sequence ... But after that, it seemed whenever I was introduced people would say, ‘Oh, you must be the son of Bouma.’ That really ticked me off.”

Arnold H. Bouma will receive the Powers Medal, AAPG’s highest honor, during the Association’s annual convention April 1-4 in Long Beach, Calif.

“When I was a boy, I didn’t even know geology could be a profession,” Bouma said, a slight chuckle punctuating his lilting Dutch accent.

“I just knew that I enjoyed collecting rocks. I just liked them.”

Kuenen’s Impact

But the counsel of the wizened gravedigger, visits to local museums and a restless, inquisitive mind eventually led Bouma to the State University in Groningen. There, after a 20-month military service in the Army ended by the death of his father, Bouma followed his fascination with rocks to the classroom and came to the attention of the famed Professor Ph. Kuenen, a pioneer in deepwater research.

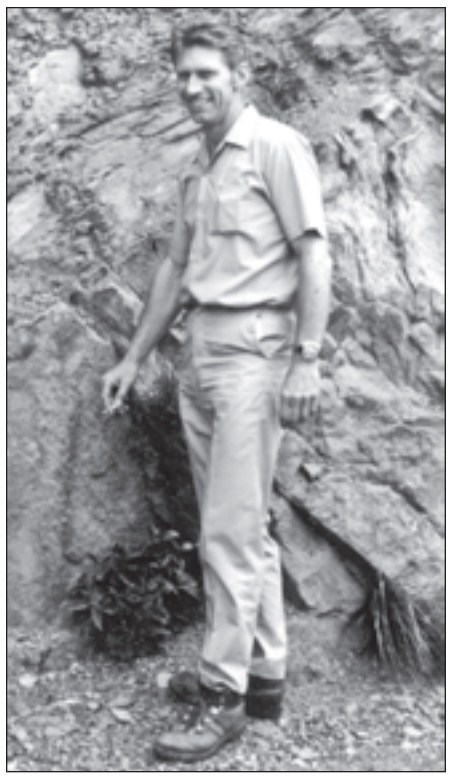
It was Kuenen who interested Bouma in turbidites as a wide-open area of research.

“My interest was so high that Kuenen eventually said to me, `Why don’t you go with Ten Haaf to Italy (on a research mission) so you can see what turbidites are really like?’”

As he moved on to the State University at Utrecht to earn his M.S. degree in geology, sedimentology and paleontology in 1959 and a Ph.D. in sedimentary geology under Professor D.J. Doeglas in 1961, Bouma said he continued his research using European outcrops and flume studies.

The precocious student’s original goal was to substantiate Kuenen’s widely held theories on deepwater depositional dynamics.

But here Bouma reveals something of the maverick in his nature, a trait that seems to connect neatly to the intuitive, wildcatting spirit that has marked petroleum exploration since its earliest days.



Bouma, 1978

As his research progressed, the student began to question his professor’s model.

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Finding "The" Sequence

Bouma's findings revealed that bed-scale turbidite dynamics were much more complex than those proposed by Kuenen.

"In Europe, in those days, professors were considered higher than God," Bouma recalled with a wry bemusement in his voice. So when his research promised to break new ground and call into question his professor's prevailing theories on sedimentary flows and deepwater deposits, Bouma said simply, "Kuenen didn't like it."

Nevertheless, the student pressed on and his doctoral dissertation, titled "Sedimentology of Some Flysch Deposits: A Graphic Approach to Facies Interpretation," published and widely distributed in 1962, set off numerous laboratory and field research studies and formed the basis of what eventually came to be known in the field as "the Bouma Sequence."

Making his name with such a landmark discovery so early in his career has had both amusing and aggravating repercussions, Bouma said.

"I honestly don't know how it came to be called the Bouma Sequence," he said. "I was never able to find out where it started. But after that, it seemed whenever I was introduced people would say, 'Oh, you must be the son of Bouma,' because they thought if you had something important named after you then you must be a very old man, or maybe you had to be six feet under.

"That really ticked me off."

Stretching Out

Nevertheless, Bouma said he was determined not to let that single namesake discovery become the be-all, end-all of his career.

In 1962, he accepted a Fulbright post-doctoral fellowship to work with Professor Francis P. Shepard at the Scripps Institute of Oceanography in La Jolla, Calif.

Then in 1966, Bouma immigrated to America with his family to accept an academic post in oceanography at Texas A&M University.

He taught there until 1975, when he was asked to join the U.S. Geological Survey, initially in the Pacific-Arctic branch and then in the Atlantic-Gulf of Mexico branch.

"One reason I went to the USGS was that at that time it was not easy to place students in jobs or research projects," Bouma said. "The job market was not very good, but with my position there I could help my students find work."

Having experienced both the academic and government climates, Bouma made a move into the corporate world in 1981, joining Gulf Oil as a senior scientist and working his way up to chief scientist and acting vice president for Gulf Research and Development Company. When Gulf Oil was purchased by Chevron in 1985, Bouma assumed the position of senior research associate with Chevron Oil Field Research Co.

During his corporate tenure, he oversaw Leg 96 of the Deep Sea Drilling Project on the Mississippi Fan and Texas-Louisiana Continental Slope, and he helped produce the documentary film "Deep Water Sands" for the BBC and AAPG.

Bouma returned to the academic world in 1988 when he was named Charles T. McCord Professor of Geology and Geophysics at Louisiana State University at Baton Rouge. There he taught and served for a few years as director of the Basin Research Institute and head of the School of Geosciences. He retired in 2005.

At that point, Bouma and Lieneke, his patient and supportive wife of more than four decades, decided they wanted to move back to College Station, Texas, where Bouma began his teaching career and where they began raising their three sons.

None of his sons, Bouma noted with a light laugh, followed him into the earth sciences. "One of them is an engineer, the second a professional in the Army and the third one is a prosthodontist," he said proudly.

Still Going Strong

Back in Texas, Bouma has taken an adjunct professorship in the Department of Geology and Geophysics at Texas A&M, and in his retirement, he said, "I'm busier than ever."

He's currently working on a textbook on sedimentology, one he is determined "will not be too thick, too expensive and will cover the subject in a way that will be accessible for students."

In addition to teaching and involving his students in field trips and hands-on research projects, Bouma is pushing forward with a bold plan to establish a Shale Studies Center at Texas A&M that

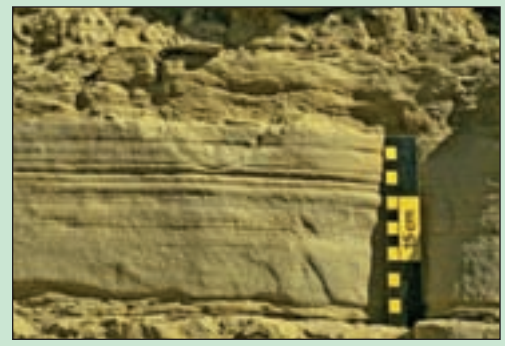
See **Bouma**, page 20

What's in a Name: The Bouma Sequence

This is the definition of the "Bouma sequence," as found in the Schlumberger Oilfield Glossary:

Bouma sequence: n (geology). A characteristic sequence of sedimentary structures occurring in sedimentary rocks deposited in areas of deep water sedimentation by turbidity currents, which form deposits called turbidites. In theory, a complete Bouma sequence comprises sediments that fine upwards, consisting of a lowermost layer of coarse, chaotic clastic sediments deposited under conditions of high depositional energy overlain by successively finer grained and better stratified sediments like sands and muds deposited under calmer conditions that are labeled as Units A though E. In practice, however, the chaotic, high-energy nature of turbidite deposition can alter or remove underlying sediments so that incomplete sequences of sediments typically remain preserved.

See: clastic sediment, sediment, turbidite, turbidity current.



Courtesy of Schlumberger: Oilfield Glossary at www.glossary.oilfield.slb.com

Amoruso to Receive Inaugural Honor

‘Go-to-Guy’ Gets Halbouty Award

By LOUISE S. DURHAM
EXPLORER Correspondent

It’s always fortunate when an organization has a recognized go-to person it can rely on to assume a position of leadership to rally the membership to accomplish its target goals.

Independent geologist John Amoruso – past AAPG president, AAPG honorary member and AAPG Foundation Corporation member – is that kind of guy.

Besides his considerable AAPG involvement, Amoruso has served as president of several other prestigious geoscience organizations, including GCAGS, SIPES, HGS and AGI. Along with taking on this array of presidential responsibilities, his additional positions of service in these and other professional groups comprises a list that fills pages of single-spaced text.

It comes as no surprise to his colleagues that Amoruso was selected to receive the inaugural Michel T. Halbouty Outstanding Leadership Award, which honors those individuals who have shown excellence in Association leadership.

The award did, however, take the recipient by surprise.

“I was flabbergasted,” Amoruso said, “and very, very pleased. Mike and I were friends who respected and liked each other, and I consider this award a great privilege.”

Amoruso’s career in geology almost didn’t happen.

“When I got to Tufts for undergraduate work, I was enrolled in engineering,” he recalled, “but I wasn’t interested or adept at it, so I looked around to see what I liked.

“I took my first course in geology and had the most dynamic professor I ever had,” Amoruso said. “He was a fantastic lecturer, and I took to it right away and have liked it ever since.

“I think of it as a real blessing,” he added, “because if you like your job you never have to work – and I love what I do.”

“You lead by instilling the desire to foster the already driven purpose of helping – they want to do the work, and you want to help them to reach the mutual goal.”

Amoruso

Helping Hands

The affable Amoruso noted he has always liked to participate in whatever group he joined. But he points to his service in the U.S. Navy as the probable training ground for the many leadership roles that ensued.

“We were on a destroyer – the *USS English* – and we had a lot of responsibilities, because a destroyer is a small ship and there weren’t a lot of officers,” he said. “When something was your responsibility, you got it done – we all had to pitch in and show leadership.”

Amoruso noted he has held some job or other with AAPG since the mid-1960s, when the annual meeting was held in Houston. As a newcomer to Houston in 1965, he joined the HGS and began his long record of service with that organization.

When queried as to how one succeeds as a leader, Amoruso emphasized it’s very different in a professional society than in a company where someone in a position of authority tells you what to do, and you must do whatever you’re told.

“In a professional society, you’re all volunteers,” he noted. “Fortunately, with geologists you’re dealing with a lot of people who want to help the science and the profession. In fact, the vast majority of geologists get involved for the betterment of everybody.

“Everyone’s a volunteer, and you’re a worker at one time and a leader at another time,” Amoruso said. “Volunteers usually are dedicated to helping, and most of the time you have people willing to work together to advance the goal that particular society has.

“You lead by instilling the desire to foster the already driven purpose of helping – they want to do the work, and you want to help them to reach the mutual goal.”

See **Amoruso**, page 20

For the Record: Amoruso's Career

Houston geologist John J. Amoruso, the winner of AAPG's inaugural Michel T. Halbouty Outstanding Leadership Award, has had a career of dedicated and excellent achievement in leadership – including, and especially, for AAPG.

His AAPG resume includes:

2007 – Michel T. Halbouty Outstanding Leadership Award.
2002, 2005 – Corporation member, AAPG Foundation.
1999, 2006 – Vice chairman, AAPG Foundation.
1998-99 – Chairman, Twenty-First Century Committee.
1998 – Member-at-Large, AAPG House of Delegates.
1994-97 – Chairman, DPA Committee on Honors and Awards.
1992 – DEG founder, charter member.
1991 – AAPG Certificate of Merit.
1990-91 – Chairman, Twenty-First Century Committee.
1987-90 – Membership Committee (chairman, Gulf Coast Section).
1987 – Honorary Membership.
1986-99 – Secretary, AAPG Foundation.
1986 – AAPG Foundation Trustee.
1984 – Member, AAPG Foundation Trustee Associates.
1984-87 – AAPG Advisory Council.
1983-84 – President, AAPG.
1982-83 – President-elect, AAPG.
1981-82 – President, Gulf Coast Section (GCAGS).
1980-82 – Chairman, Governmental Affairs Committee.
1979-82 – Corporate Advisory Committee.
1979-80 – Chairman, Strategic Committee on Public Affairs.
1979-80 – Vice president, Gulf Coast Section.
1977-79 – Secretary, AAPG.
1976 – Vice chairman, House of Delegates Committee.
1975-77 – Distinguished Lecture Committee.
1973 – A.I. Levorsen Award, Southwest Section.
1970 – A.I. Levorsen Award, Gulf Coast Secton. ❑

Amoruso

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Enter the Young

The new Halbouty award is ranked as AAPG's second most distinguished honor, second to the Sidney Powers Memorial Award. Only one award is given during any one calendar year.

The Halbouty Award previously was known as the Michel T. Halbouty Memorial Human Needs Award, but the award's intention and name were changed last year by the Executive Committee to honor outstanding leadership.

This award and the Sidney Powers Memorial Award shall be mutually exclusive. Amoruso will receive his honor during the opening session of the Annual Convention in Long Beach, Calif.

He noted it's been a joy to be involved in all levels in the professional societies – emphasizing the friendships developed and the network that goes hand-in-hand with membership and hands-on participation.

As might be expected, this high-profile leader has a keen vision of what must come next.

"The one thing you have to get used to is that for the success, growth and continuation of any organization, the younger members have to step up and fill those spots themselves," Amoruso said. "If everything is right with the organization, they will want to do the same thing – to help the profession and the science as much as you do.

"You can't be a hanger-on and keep some position that others could take," he noted.

"The only way to keep it viable is to involve the younger people – and there are a lot of the young ones who are very dedicated." ❑

Bouma

from page 17

will forge an academic-corporate partnership to set up a new system of shale studies employing industry cores and outcrops and utilizing the talents of geology and engineering students.

The center's mission, he said, will be to investigate the forces that create shale and how shale eventually becomes oil and gas.

"There's still a lot we don't understand about shale, and since it makes up about 60 percent of sediments that are the source of oil and gas, I think it's a fantastic area of research," Bouma said.

Despite owning a wall full of plaques, awards, citations and professional honors, Bouma, now in his mid-70s, still bubbles over with enthusiasm as he talks about his latest ventures.

He said he's seen enormous changes in the field during his career, with breathtaking advances in technology and heavy reliance on computer science.

But while the computer is a useful tool, he said, it can't replace the intelligence, experience, keen observational skills and intuition of the dedicated geoscientist.

"There are still discoveries to be made, but it won't be the computer that tells us what it all means," Bouma said. "For that, we always have to go back to the rock to find out what we can do with it and what it means.

"And for that," he added, "the geologist who can explore and observe and think is still the most important thing." ❑

Costs, Risks Rising

It's a Great Time to be Prudent

By DAVID BROWN
EXPLORER Correspondent

It's a complex and competitive world for exploration.

Expensive, too.

Kurt Rudolph grapples with those issues and many more as chief geoscientist for ExxonMobil Exploration in Houston.

Rudolph will present the Michel T. Halbouty Lecture at AAPG's annual convention in Long Beach, Calif., on "Current Exploration Trends: Prudent Investments or Irrational Exuberance."

His main message?

Prudence and balance are necessary, now more than ever.

As the company's top earth scientist, AAPG member Rudolph reviews ongoing programs and works on special projects for ExxonMobil Exploration.

He also serves as an adviser to senior management on upstream opportunities and technical matters – a job that requires an in-depth, up-to-date view of global exploration.

Rudolph describes six trends in exploration today:

✓ An increasingly competitive environment with a changing political and commercial context.

He said this climate continues to drive up the cost of opportunity capture for the industry, because of increased competition for exploration blocks, the rising expense of doing business and higher profit shares by host governments.

While recent oil and gas prices have spurred exploration efforts, Rudolph said the commercial context of operating can't be ignored.

"Everybody has been focused on oil and gas commodity prices, but if you look at the other aspects affecting our industry – like the cost of steel, or drilling day rates – they're going up at similar rates," he said.

✓ The proliferation of large and varied data sets and the associated tools to interpret them.

"There's been some debate in AAPG about what people are calling 'Nintendo geology.' But we really have no choice but to use the computing tools to interpret and integrate more and more information," Rudolph said.

Exploration will need all the tools enabled by large data sets, according to Rudolph, but the use of data should enhance geological understanding and not replace it.

"It's basically a pragmatic imperative to deal with these high-end data sets," he said. "But as we continue to use very large data sets, we can't stop recognizing the importance of geoscience fundamentals."

✓ The importance of understanding basin and play characteristics and being able to forward-model the earth.

"As we move into unproven areas, our ability to understand and forward-model petroleum systems is becoming more important in terms of high-grading prospects and dealing with risk," Rudolph said.

He emphasized the necessity of ground-truthing and calibrating current knowledge, for both frontier exploration and play development.

"As we more fully exploit some of these plays – say, in West Africa, Brazil and the Gulf of Mexico deepwater plays – we're also going to continue to move out into more remote and higher-cost areas," he said.

ExxonMobil has recognized the need for an evergreen understanding of play settings around the world, according to Rudolph.

"Over the past 20 years we've done dozens of studies revisiting areas, working to understand the regional characteristics," he said.

✓ The need to recognize and develop near-field potential.

"Maturing fields in well-known producing areas do not seem ripe for development, but there is a tremendous potential for additional recovery from these fields," Rudolph said.

Developing near-field opportunities also avoids the competitive cost of acquiring new acreage, he noted.

"Exploiting new reservoirs in known fields and plays usually implies a paradigm-shift, often driven by new concepts, technology or data," he observed.

✓ The pursuit of deeper and more subtle plays in known areas.

Today, the industry can extend plays through improved seismic imaging, reservoir quality concepts that recognize deep porosity preservation and improved drilling and production capabilities, Rudolph said.

One challenge for the industry is identifying basins where deeper plays may emerge, he said.

"There is usually more promise in a basin that is more complex, has multiple petroleum systems and has also seen inefficient exploration because of the leasing history," Rudolph said. "Basins that have these characteristics, such as

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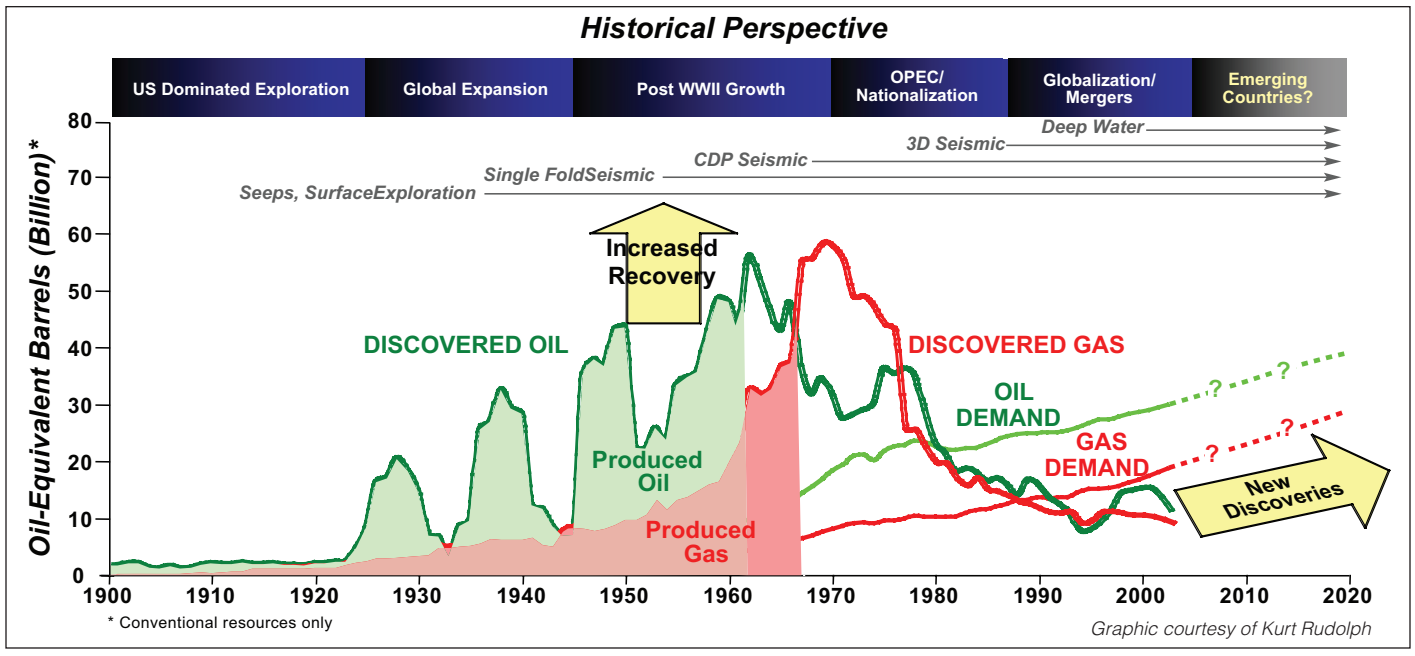

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the Gulf of Mexico, have a long history of generating multiple plays.

"Simpler basins are more efficiently creamed, and often see significant value-destruction as exploration continues with little material success," he added.

✓ The development of non-conventional resources – tight gas, heavy oil, shale gas and coalbed methane.

"These resources have very different characteristics from more conventional resources. They tend to have a long asset life. They require integration of subsurface engineering and commercial aspects," Rudolph said.

"They are operationally very intense and they lend themselves to a constant learning approach. The development and introduction of new engineering technologies are very important here," he added.

Rudolph believes the nature of non-conventional resource plays will require a longer-term and more integrated model for exploration.

"Basically, you're exploring while you're developing while you're producing," he noted.

Finding the Balance

In the Halbouty Lecture, Rudolph will present specific examples related to each of these trends, drawing from exploration and development work in North America, West Africa, the Middle East and elsewhere.

He plans to close with a summary of today's realities and a more philosophic look at the future of the industry.

"I think everyone's aware of the discussions about Peak Oil that have been going on. The bottom line is, we're going to be in a challenged time for meeting the world's energy demands," he said.

Tackling that challenge in an increasingly complicated world will require an ever more integrated approach to exploration, one that utilizes information across areas, business stages and disciplines, and across geoscience, engineering and commercial considerations.

No one knows everything the future will bring, Rudolph said. The industry faces numerous uncertainties, so managing these uncertainties in a thoughtful way is a key to success.

"If you look at the classic learning curve, with knowledge and understanding increasing with time, the key opportunity for success is when that curve is steepest, and your understanding is the most volatile," Rudolph said.

"If you wait until your knowledge is more complete, it is often too late – options for action have closed and the opportunity has been lost," he noted.

At the same time, meeting the world's future energy needs will require big investments, with continued pressure on the industry to perform at very high levels.

"But on a hopeful note, the industry has a long track record of meeting these type of challenges," he said.

In a complex, competitive and expensive climate for exploration, the industry needs a prudent, balanced approach.

It might be a good time to hedge your bets, Rudolph thinks.

"In this uncertain environment, you need to spread your investment over these various elements of the portfolio," he said. "That's always been important, but it's going to be even more important in the world we live in now." ❑

But Things Like This Are Driving the Oil Price

Pay No Attention to This Headline!

By DAVID BROWN
EXPLORER Correspondent

"Geopolitics and headlines have been controlling oil prices for easily the past seven years," noted Michael J. Economides.

One of the most recognized – and recognizable – figures in the oil and gas industry, Economides will discuss "Energy Geopolitics" as the All-Convention Luncheon speaker on Monday, April 2, at AAPG's Annual Convention in Long Beach, Calif.

He will present his views and opinions on headline topics affecting the industry. That's promising for two reasons.

First, the world today has no shortage of scary headlines about geopolitics and energy.

Second, Economides never has a shortage of opinions.

He is a professor in the Cullen College of Engineering at the University of Houston and managing partner of a petroleum consulting firm.

The author or co-author of 11 books – with two more on the way – and editor-in-chief of the *Energy Tribune*, Economides also will receive AAPG's Geosciences in the Media Award at the annual meeting, for his recent best-seller, *The Color of Oil*.

Author, teacher, consultant and AAPG award winning journalist Michael J. Economides will be the guest speaker at this year's All-Convention Luncheon, which will begin at 11:30 a.m. Monday, April 2, at the Hyatt Regency ballroom.

Economides, winner of this year's Geosciences in the Media award, will speak on "Energy Geopolitics."

Tickets to the luncheon are $30.

He is a professor at the Cullen College of Engineering at the University of Houston; managing partner of a petroleum engineering and strategy consulting firm; and editor-in-chief of the *Energy Tribune* magazine.

Also on the luncheon agenda is presentation of officer candidates for the AAPG Executive Committee and this year's AAPG Teacher of the Year, Ryan Henry.

For more information, go online at www.aapg.org. ❑

Economides

Headline:

LATIN AMERICA LUNGES LEFT

Economides called Venezuelan President Hugo Chavez "an anachronistic version of Eva Peron" and noted the close ties Chavez has to other Latin leaders, particularly Bolivian President Evo Morales.

"They are not alone – they are very popular, without a doubt. They've been a disaster for their countries," he said.

The tightness and price of world oil supplies will determine the clout Chavez wields in the future, according to Economides.

"At $75 oil, Chavez is a 1,000-pound gorilla," he said. "At $50 oil, he's reduced to a monkey."

Headline:

ENERGY MILITANTS ON MARCH

Economides sees the emergence of an "axis of energy militants" – national leaders who want ever-higher oil prices regardless of the consequences to the world economy.

In that group he included Chavez, Russian President Vladimir Putin and Iranian President Mahmoud Ahmadinejad.

"There is a common thread between all of these guys," he said. "Basically, they are socialists of different types."

OPEC tried to cushion oil price spikes to avert serious recession in oil-consuming countries, but the energy militants would welcome economic suffering in the West, especially in the United States, Economides said.

"They would love $100 a barrel oil," he noted.

"Geopolitical militants have certainly held sway in recent years. To complicate matters you have China, which has an insatiable appetite for oil," he added.

Headline:

CHINA SET TO PASS U.S.

Economides has traveled to China. He said "Beijing has 200 hotels and the worst is as good as the best hotel in Houston. Beijing and Shanghai have 1,000 restaurants and the worst is as good as any restaurant in Houston."

Far short of the domestic resources it needs in order to develop economically, China currently derives 70 percent of its power from coal, "something the U.S. hasn't seen since the 19th century," Economides observed.

"China is the greatest emerging superpower in the history of the world. People in the United States need to recognize this. China will surpass the United States in many ways, very soon," he predicted.

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As an irony, Venezuela's Chavez is "the leader most joined at the hip to the United States," Economides said.

The United States has the refining capability and markets Venezuela needs for its heavy oil. Now there's talk of China retrofitting refineries and diverting that heavy oil for its own consumption, according to Economides.

He said that would be a disaster for the United States.

"You have China out there lurking to take Venezuela's heavy oil. It will be very interesting how that will play out over the next few years," he observed.

Headline:

GEOPOLITICS PADS OIL PRICE

Right now, the equilibrium price of oil is $40, Economides said. On top of that price, the market has added a headlines-and-geopolitics cushion, he stated.

"I would say the fear factor in the Middle East added $10, not counting Iran. Iran added another $10. And Chavez and Putin were maybe another $5," he said.

He expects the geopolitics price addition to remain in place for the foreseeable future, with a break-out possible at any time.

"The headline that didn't happen – but it could have had a huge impact – was the UN deadline on Iran came and went without a whimper from the United States," he commented.

Headline:

DEEPWATER LIFTS U.S. PROSPECTS

Economides believes the emergence of ultra-deepwater discoveries, like Chevron's Jack field, will have huge consequences for the United States.

"The impact that ultra-deepwater production will have on the U.S. energy supply is so great that I believe it may reverse the long-term trend exactly the way Prudhoe Bay did when it came online," he said.

Headline:

RUSSIA RETRO UNDER PUTIN

Economides said he is working on a book about what he calls the re-Sovietization of Russia under Putin.

"He's not just taking Russia back to Brezhnev. He's taking it back to Khrushchev. Putin is taking Russia back 50 years – you have to go back 50 years to see what you see going on in Russia now," he said.

He agreed that the takeover and forced sale of Yukos assets was "the theft of the century," and noted the emergence of Russian giant Gazprom as a world-scale energy force.

"Gazprom is just such a gargantuan company – six times the size of Shell, for comparison – it's a state within a state. The question is whether Russia owns Gazprom, or Gazprom owns Russia," he observed.

Economides said there are even rumors that the current president of Gazprom will become the next president of Russia – and after he leaves office, Putin will move up to become president of Gazprom.

Headline:

OPEC MEMBERS LOSE CLOUT

At one time, OPEC could move world oil prices by sharply increasing or decreasing production, Economides said.

"OPEC really has very little excess capacity left. It can't manipulate the market the way it used to," he noted.

The organization's member countries once had a surplus production capacity of 10 million barrels a day, but that has dwindled to almost nothing, he said.

Today, the energy militants are more likely to move market prices.

"Russia – which isn't a member of OPEC, of course – has been acting like the most militant of OPEC countries," Economides said.

Headline:

U.S. NEEDS SENSIBLE POLICIES

In reacting to the 2007 State of the Union address by President Bush, Economides said, "I thought I was listening to (former presidential candidate Sen. John) Kerry.

"The United States is a huge consumer of energy, and on top of that we have some of the dumbest energy policies in the history of the world," he said.

In regard to a push for more ethanol in the U.S. fuel supply, Economides commented "ethanol is a scam, you realize. Ethanol has a net negative energy quotient."

About the United States relying more heavily on wind and solar energy, he said, "What nonsense is this? Wind and solar are much more expensive than the most expensive natural gas."

Headline:

IRAN ON POWER TRIP

"The fact of the matter is, Iran has been hurting badly," Economides said. "During the time of the Shah, Iran was producing six million barrels a day. Now they are barely meeting their OPEC quota."

Iran's population has increased 75 percent in the past 25 years, he noted, and that growth has diverted energy resources to fueling power for the country's development.

Even worse, Iran has become a net importer of natural gas, and uses about half its oil production to generate electricity.

"As their population goes up, they are using more and more oil for power generation, which is preposterous in these days," Economides said.

"Nuclear power generation is very rational for them. That would free oil for external sale," he added.

Headline:

MIDDLE EAST TOP CONCERN

While Iraq and Iran now dominate U.S. attention, geopolitics in other parts of the world continue to affect the global energy picture, according to Economides.

"Basically, you have the events in the Middle East, the fear factor in the Middle East. But there are many other events that have taken place," he said.

Given the Iraq War and the sensitive nature of events in the Middle East, that region probably will remain a focus of concern, Economides noted.

"You want to know the headline that would move oil over $100 a barrel? Israel Attacks Iran," he said.

Headline:

HEADLINES PAINT GRIM PICTURE

"There's not much good news for the oil industry in geopolitics," Economides observed.

"It would take very little for the price of oil to go up. Even $50 a barrel, or $55 a barrel, can be ill-afforded by Venezuela and Russia," he said.

But he also advises, don't pay too much attention to what's in the headlines. They may have no more real meaning than the headline for this story.

"As usual," Economides said, "geopolitical issues have a headline component, and a reality component." ❑

Graduated Dues, Petition Candidates

Major Items on Delegates' Agenda

By LARRY L. JONES
Chairman, House of Delegates

The upcoming House of Delegates meeting, which will take place April 1 at the AAPG Annual Convention in Long Beach, Calif., promises to be a very important meeting for AAPG.

Agenda items include:

✓ The Rules and Procedures Committee will propose certain changes to reconcile rules and procedures ` with the AAPG Constitution and Bylaws. These will relate to Nominations, Honors and Awards and Election Campaign Policy.

✓ For the first time in several years, the Resolution Committee has been successfully working with several societies from around the world to prepare them for becoming Affiliate Societies of AAPG, and at least two will be brought forward.

✓ However, the greatest interest of this meeting will come from the considerations of the Constitution and Bylaws Committee. Their proposals are all related to Bylaws changes and do not change the AAPG Constitution, hence they will require the approval of a two-thirds majority of those attending the Long Beach convention.

The first of these will be reconciling the Bylaws for the establishment of a "vice president, regions" office, as initiated by the 2006 HoD meeting and subsequent vote of the membership.

Next we will deal with "petition candidates."

Several recommendations were considered relative to this matter, but only one series of motions will be brought forth, which will completely bring petition candidates under the same election rules as candidates nominated to the Executive Committee for approval.

In addition, no member of the Advisory Council or Executive Committee, who is finishing their term of office and who was involved in the nomination of major Association officers, can become a petition candidate for the election cycle occurring immediately thereafter.

* * *

The most significant set of motions to be advanced to the House relates to the establishment of a "graduated dues" structure for membership applicants and existing members.

AAPG has experienced a recent net increase in membership as the partial result of concentrated efforts in both the Sections and Regions. However, the general trend is a year-by-year reduction in membership, and AAPG must reverse this trend if we are to maintain the position of the pre-eminent geoscience association.

A Graduated Dues Committee was formed to evaluate the options. It compared the significant growth of such associations as SPE and others, plus the manner in which they accomplished their orderly growth. This effort moved from that committee to the Advisory Council, to the staff for documentation, to the Executive Committee and finally to the House of Delegates.

It was determined that an "ability to pay" model be proposed. This would be balanced by a reduction in services if less than full dues were being paid.

There would be a three-tier system established based on gross personal income. The present dues for members and Associate members with more than four years of membership are $80 (U.S.) per year.

The concept is not geographically bound and could benefit a part-time professor, a retired individual or one who has lost his job or an international member or applicant who works for a low paying national oil company. All members at some point could benefit.

The brackets would have dues established as $80 for gross personal income greater than $50,000; $40 for $50,000 down to $25,000; and $20 for less than $25,000.

This would be accompanied by a reduction in services for less than full dues. Full dues could receive hard copies of both the EXPLORER and BULLETIN; second tier would receive a hard copy of the EXPLORER plus a digital copy of the BULLETIN; and third tier would have

See **HoD**, page 30

Candidates for House of Delegate officers have been announced.

Chairman-Elect

❒ **Sandi Barber**, project manager, SAIC, Houston.

❒ **George Bole**, consultant and instructor for the University of Tulsa's Department of Continuing Engineering and Scientific Education. Previously with Amoco.

Secretary/Editor

❒ **David Farmer**, vice president, Stanolind Oil & Gas, Midland, Texas.

❒ **Robert E. Webster**, senior geoscientist, Hunt Oil Co., Dallas.

The election will be held at the HoD meeting April 1 in Long Beach, Calif. The one-year terms will begin July 1.

The chairman-elect will assume the chairmanship in 2008. ❒

Attractive 'Launch Pads' to Find Oil

THUMS an Oilman's Island Paradise

By BARRY FRIEDMAN
EXPLORER Correspondent

For many outside the oil industry, the term *scenic oil island* may be something of an oxymoron, on the order of *concerned banker* or *designer t-shirt*.

But in Long Beach, Calif., there's a 42-acre oilfield – offshore, in plain view of tourists, port traffic and beach lovers – with 175-foot-high drilling towers and 1,100 wells that penetrate a vast underground.

It may well be the most unique – and beautiful – oil drill site in America.

Of course, you wouldn't know by looking at it.

Which is the point.

It's the city of Long Beach's THUMS Island project, an approach at development of the prolific Wilmington Field that five major oil companies (Texaco, Humble, Union, Mobil and Shell – T.H.U.M.S.) undertook to:

✓ Provide oil.

✓ Not offend the aesthetic sensitivities of oil industry detractors – or anyone else, for that matter.

Why the fuss?

According to the city of Long Beach and the state of California regulations and guidelines, oil installations, drilling towers and rigs have to be constructed to blend into the environment. In short, structures whose DNA doesn't lend itself to disguise, camouflage and sound-proofing have to be designed to do more than just pump oil.

They have to look like they're doing something else or, more to the point, like nothing at all.

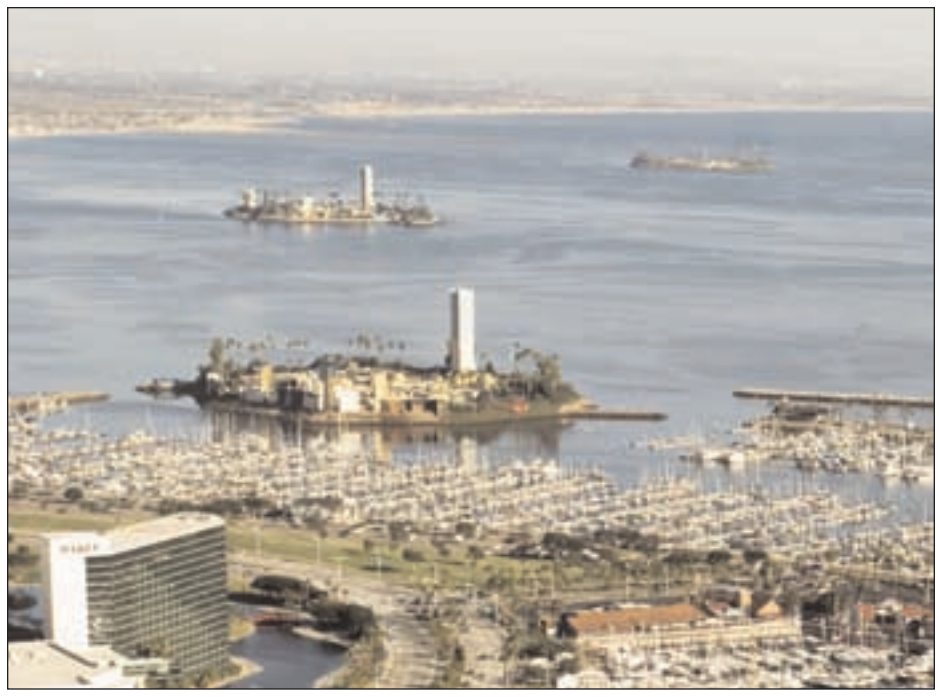

Photo courtesy of Occidental Petroleum Corporation

The THUMS Island project – good for Long Beach, good for the industry.

You'll probably see the islands as you make your way to the AAPG Annual Convention – but there's also a chance to get a closer look at what may be the most beautiful oil site in America.

Two field trip tours of the THUMS Island project will be offered during the Annual Convention – from 1-4:15 p.m. Sunday, April 1, and at the same time on Wednesday, April 4.

AAPG member John Jepson, a geologist with the City of Long Beach Gas and Oil Department, will lead the three-hour tour of the scenic oil islands and provide the story of their creation and history.

For more information go online to www.aapg.org, and click on the Long Beach section on pre-convention field trips.

Further, in the case of Long Beach, wellheads and pipelines must be located below ground level to ensure that the islands enhance the appearance of both harbor and skyline.

So, the trick is for these well operations to find peace among the various – and constantly changing – local aesthetic sensibilities.

Under My THUMS

The battle lines in California in general and southern California in particular between those who favor more oil exploration versus those who want more environmental protection are well drawn. For every Greenpeace contributor, there is the energy advocate who sees an untapped well.

For most, THUMS is the best template for a truce.

AAPG member Stephen Testa, executive officer of the State Mining and Geology Board of California, says the facility is the "exception, not the rule."

By restricting the development to offshore facilities the city of Long Beach has been able to develop the field, which actually underlies the convention center where the AAPG annual convention will be held.

The four islands that comprise THUMS – Grissom, White, Chaffee and Freeman, all named after NASA astronauts who died in training accidents – are located about a mile offshore in Long Beach Harbor. Each island is approximately 10 acres and, in

See **THUMS**, page 30

HoD

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digital only.

Any member who falls in tier two or three can elect to pay full dues and enjoy hard copies.

* * *

Three points, among others, have been raised.

✓ Why do we not make everything digital?

Many AAPG members want a hard copy, and if we made the EXPLORER digital we would lose a significant portion of our budget via loss in advertising.

✓ Dues in the 2005-06 audit accounted for 13 percent of AAPG revenue, and when investment gains were considered, it was 11 percent. The worst-case scenario would be a short-term loss of 20 percent in dues, but savings of not printing the material and mailing are not considered.

If that worst case was true, our AAPG revenue would be reduced by 2.6 percent, and this should be further offset by anticipated increased membership.

✓ Finally, can we trust our members to place themselves in the proper tier, based on gross personal income?

I believe we can trust the vast majority of them.

AAPG needs to establish an orderly growth of membership, who desires to make a contribution. I sincerely ask your support for the graduated dues structure course of action. ❑

THUMS

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keeping with local regulations and tastes, is equipped with an irrigation system; palm, oleanders, sandalwood, figs and acacia trees; and sound proofed and camouflaged oil drilling derricks.

There's even an aquarium nearby.

Additionally, abstract sculptures and waterfalls, some as high as 45 feet, are offset by other landscaping and night lighting.

Specifically, the islands were constructed using 640,000 tons of boulders and 3.2 million cubic yards of sand. The boulders, weighing up to five tons each, rest on the shallow harbor bottom and form a perimeter for each island. THUMS also injects reclaimed city water to maintain reservoir pressure.

More than 1,200 wells have been drilled from the islands, according to Occidental, which has operated THUMS since 2000. THUMS is the largest crude oil producer in the Los Angeles area, with a combined daily production rate of 38,000 barrels of oil and 11 million cubic feet of natural gas per day.

THUMS has helped make the Wilmington Oil Field – the third largest field ever found in the United States – one of the most productive fields per acre the world has ever known.

And it is virtually invisible from the shore.

My Sweet Embraceable Fuel

One historian told the *Honolulu Advisor* newspaper that the field is a "prime example of the aesthetic mitigation of technology."

To some, like architectural historian Kurt G.F. Helfrich, THUMS represents the compromise between industry and the environment, which Helfrich describes as the moment those communities, especially in southern California, went from rejection of technology to the adaptation of it.

This psychological journey, if you will, leaves people like Testa somewhat nostalgic.

"Early postcards ... illustrate how society used to celebrate its industries – yes, including the petroleum industry, knowing that this industry supported its community," he said. "Now we camouflage our rigs, but we still do not communicate well with the general public."

The industry, though, does seem to be getting better at it.

THUMS was the first upstream oil and gas producer in California to join the California Climate Action Registry, an environmental group looking at climate change, specifically greenhouse gases. Occidental will now report all emissions from its operations, both offshore and on.

"THUMS is taking an important step in demonstrating environmental stewardship," said Diane Wittenberg, president of the California Climate Action Registry, during the announcement. "We hope other oil and gas producers within the state will soon follow."

More importantly than just its cosmetic advances, though, is this: in its 40-year history, THUMS has not experienced a single pipeline leak.

Frank Komin, facility president and general manager, added that "in addition to investing millions of dollars to install pollution limiting equipment throughout our operations, we are working to help meet California's energy needs by developing a long term supply of clean burning natural gas."

Specifically, Occidental operates the eastern offshore section of the Wilmington. The field, discovered in 1932, is estimated to have three billion barrels of oil at its discovery and has poured more than $4 billion into California's economy

THUMS does have its share of challenges, though, namely the field is about 90 percent depleted, according to John Jepson, a geologist with the city of Long Beach Gas and Oil Department.

The field will revert to city control when the wells dry up.

"Here in southern California," he said, "we have such a diverse economy and so many people (an estimated 10 million) that few people know of the local oil industry."

THUMS, he says, "is a great example of the pressures facing the local oil industry. This field is 85 years old, has produced almost a billion barrels, has millions of barrels left to recover, but the wells cannot compete with properties worth millions.

"It makes for a very interesting discussion of land use," he said – regardless of how many palm and acacia trees you plant. ❑

Survival Depends on Skills, Smarts

Independents: Lessons to Teach

By LOUISE S. DURHAM
EXPLORER Correspondent

Admittedly angry over Big Oil's big profits the past couple of years, a host of elected officials in the nation's capital recently cobbled together a package of onerous proposed legislation designed to strip the industry of tax breaks and to force it to increase royalty payments.

However, it would be prudent for the zealous lawmakers to take an extra deep breath of the apparently thin air enveloping Capitol Hill in order to calm down and examine a major potential consequence of their current shenanigans:

The hastily assembled anti-industry proposals, once enacted, may well decrease domestic oil and gas production (read: increase imports). After all, the new laws undoubtedly would impact not only the big guys but also the independents and small operators who fill the critical role of finding and producing the bulk of America's own oil and gas resources.

Monika Ehrman will present the paper "From Wildcatters to Wall Street: The Role of Independents and Small Operators in Today's Oil Patch" at 3:20 p.m. Monday, April 2, at the AAPG Annual Convention.

Her talk is part of the AAPG Forum on Independent Producers Re-Exploring Mature Fields.

She will be followed by Vincent J. Hamilton's talk on "Building a European Independent," and a panel discussion.

Given the current anti-industry jockeying in the D.C. crowd, it's timely indeed that a forum at the annual AAPG meeting in Long Beach, Calif., will include a presentation tagged "From Wildcatters to Wall Street: The Role of Independents and Small Operators in Today's Oil Patch."

"The importance, particularly today, is there's a real push for growing our own domestic natural resources, especially in terms of natural gas production," said Monika Ehrman, an attorney in the Oil & Gas Practice Group at Locke Liddell & Sapp, who will make a presentation at the meeting.

"It's the independents who produce most of our oil and gas resources (an estimated 90 percent of the oil and gas wells in the United States)," she said, "but the role of these companies and the small operators is overshadowed by the supers, such as Exxon, BP and others.

"People are not as aware of the important role independents play," Ehrman noted. "This can be a one or two-person oil company in West Texas with its own rig, and also the larger independents who have grown from being focused on a regional area, and in some cases have grown internationally and then decided to come back to a domestic area."

Valuable Lessons

Independents and small operators are usually leaders in a specific geographic area, Ehrman said, and they become leaders in operating these areas and in the technology. The former Mitchell Energy comes to mind given its almost two-decade effort to develop the technology to produce gas in commercial quantities from the now-hugely-productive Barnett Shale.

There are plenty of lessons to be harvested from these smaller members of the oil patch, according to Ehrman, who noted several examples:

✓ The first thing one can learn from an independent or small operator is how to define a scope, she said. This involves defining an operating area, which could entail divesting assets scattered geographically, including overseas, and narrowing the focus.

Ehrman cited, for example, EnCana's "amazing" set of international and domestic assets and the ultimate divestment of some non-key properties to focus on domestic natural gas production.

She noted still another way to define yourself is by resource area, such as the Barnett, the Fayetteville Shale or the Canadian oil sands.

✓ How to set and measure goals is yet another lesson to be learned. Ehrman noted what makes a successful independent successful is they have a way to set and measure goals (whether formally or informally) and the level of risk. The risk can be financial, geographic, technical, political, etc.

Independents have the advantage over the majors here in that it's easier to communicate and focus on goals with fewer levels of management; measurements of risk levels or limits are performed on a routine schedule.

✓ Become an expert – either keep up with or develop technology that makes you a leader in the designated area.

This doesn't necessarily mean the most expensive or the most cutting edge technology but what works best for the particular objective. For example, producing marginal wells in the Oklahoma Panhandle may require less sophisticated technology than what is needed to frac the producing intervals in some of the now-popular shale plays.

✓ The successful independent avoids empire building – the goal is to become the best company in a particular area or region. Whether private or public, the aim is to grow for the sake of quality.

And it's not always about acquisitions; it also entails divestitures where practical. ❑

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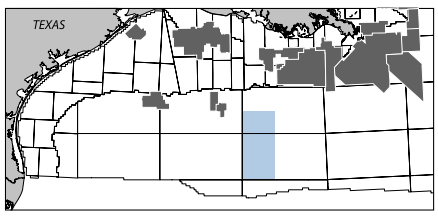

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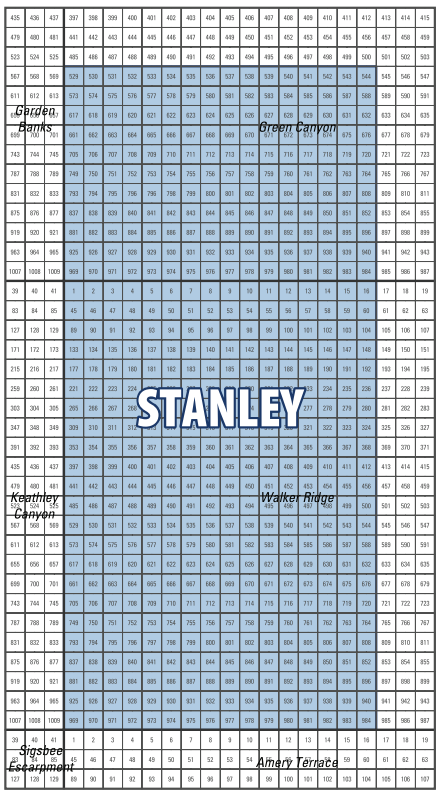

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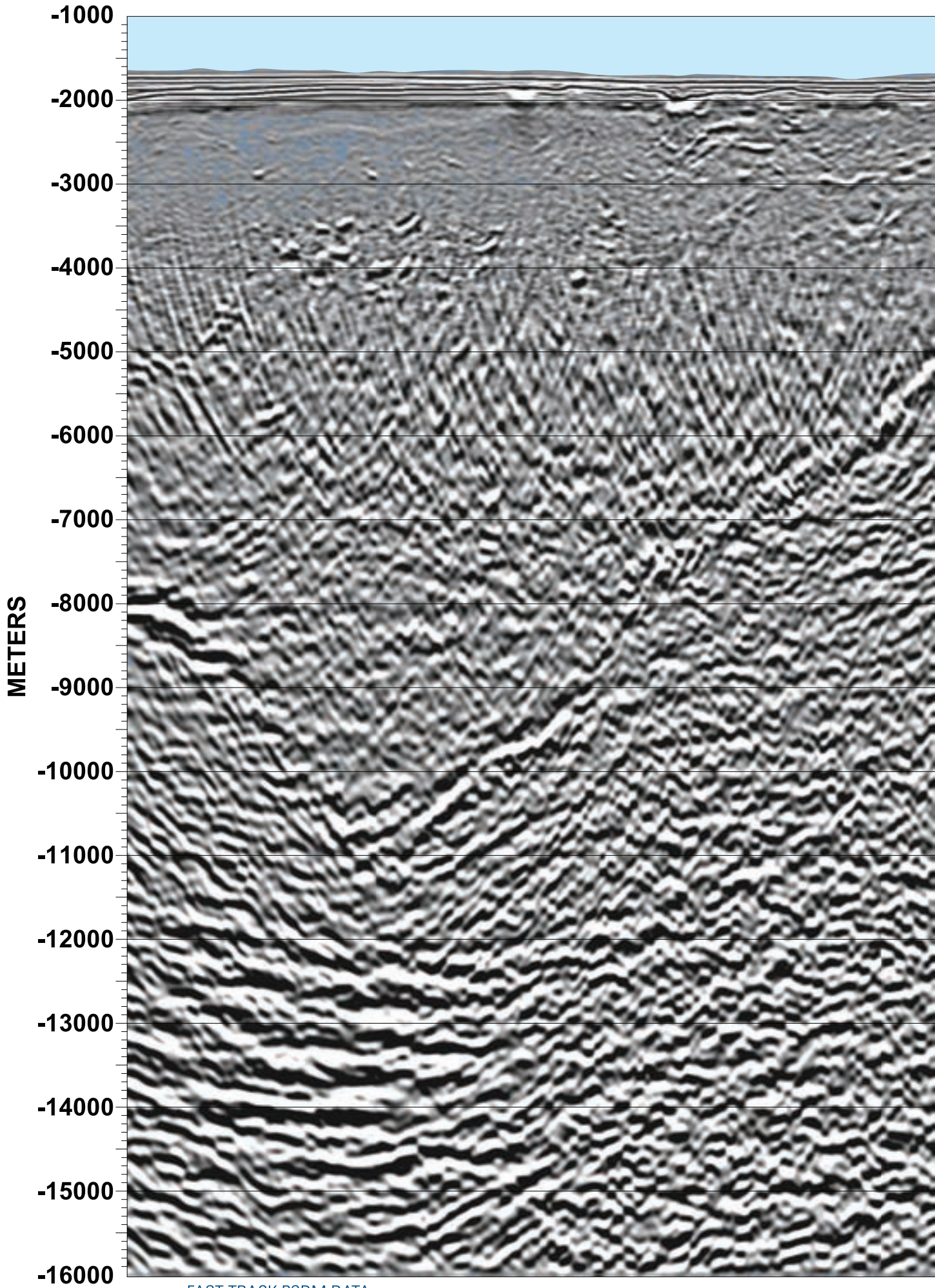

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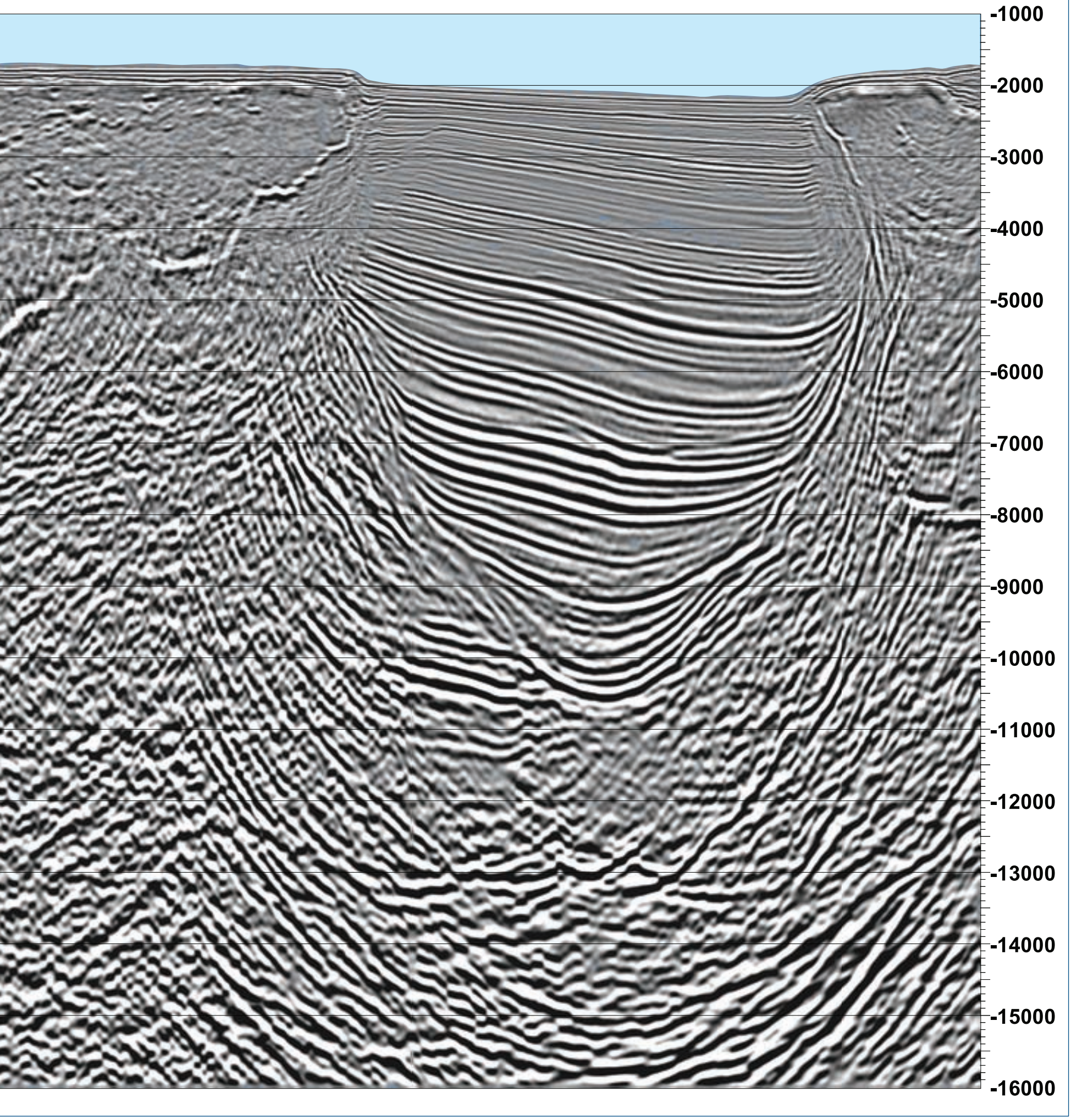

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World Fields Study Shows Trends

Giants Like Stable Environments

By DAVID BROWN
EXPLORER Correspondent

It's unusual for researchers to predict where future exploration will discover elephants, the world's largest oil and gas fields.

It's even more unusual when they turn out to be right.

One of the industry's most interesting research projects deals exclusively with the past and future location of giant fields.

Paul Mann will present a project update at the AAPG Annual Convention in Long Beach, Calif., in the session "Emerging Trends from 69 Giant Oil and Gas Fields Discovered from 2000-2006."

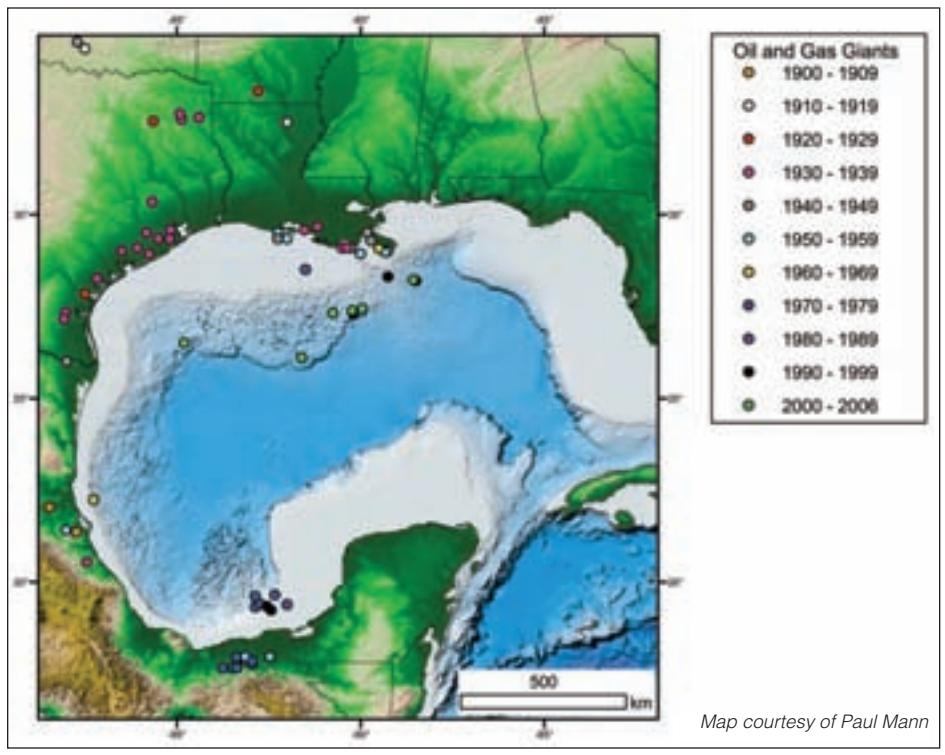
Mann is senior research scientist for the University of Texas Institute of Geophysics (UTIG) in Austin.

He collaborates on the giant fields project with Mike Horn, a Tulsa consultant and a past AAPG editor, and Ian Cross, a vice president for IHS in Houston.

Their work locates and types giant fields around the world and relates them to their basin settings. By definition, a giant field contains at least 500 million barrels of ultimately recoverable oil or gas equivalent.

Horn said recent work indicates that about 40 percent of world hydrocarbon resources comes from giants.

"Traditionally, people have been saying that 50-60 percent of ultimate recovery is found in giant fields," he said. "I think that figure is down to about 40 percent now."



Map courtesy of Paul Mann

A Good Start

After analyzing giant fields discovered up to 2000, Mann and his colleagues predicted that new giant discoveries for 2000-09 would occur primarily in passive margin and rift environments, especially in deepwater basinal settings.

They also projected the addition of giant fields in known areas, including hydrocarbon provinces of the Persian Gulf, West Siberia and Southeast Asia.

So far, those predictions have been spot on.

Mann said the giant fields project dates back to a series of *World Oil* articles published in 2001. Another descriptive paper appeared in AAPG Memoir 78, *Giant Oil and Gas Fields of the Decade 1990-1999*.

That monograph was edited by the late Michel Halbouty, who had prepared previous volumes tracking decadal giant discoveries starting in 1960.

"What I found lacking in the previous giants literature was a global and tectonic scale of observation," Mann said.

Paul Mann will present the paper "Emerging Trends form 69 Giant Oil and Gas Fields Discovered from 2000-2006" at 1:20 p.m. Monday, April 2, at the AAPG Annual Convention in Long Beach, Calif.

His co-authors are Mike Horn and Ian Cross.

The paper is part of a session on "Searching for Success: New Areas, Concepts and Challenges."

"The term 'giant oilfield' gets bandied around a lot. My interest was to remove their mystique by taking the locations of all giant oil and gas fields and plotting them on geologic maps," he added.

That required (a) valid information on known giant fields, and (b) an adequate and reliable geologic world base map.

Information on existing giants came from Petroconsultants, later part of IHS. For the base map, Mann chose Exxon's world geologic map compiled in the 1980s, "since it's a global map with a standard color and symbol scheme," he noted.

"We are merging state-of-the-art production and discovery information with the latest thinking on basin-forming mechanisms," he said.

As he plotted the known giants, many showed up in proximity in "clusters" of large field groups.

"The advantage of this approach was that it took a global look at these 23 cluster areas," Mann said. "We also classified the types of basins in which

See **Giant Fields**, page 38

Has Another Giant Been Found?

The first giant field discovered since 2006 may already have been found.

According to Russian press reports, a new giant field with as much as 42 trillion cubic feet of recoverable gas was discovered in eastern Siberia, near the existing Kovykta supergiant gas/condensate field.

"It's an interesting (giant fields) cluster area because this is the only cluster on earth that is derived from upper Precambrian source rocks," said Paul Mann of the Institute of Geophysics at the University of Texas-Austin.

"This is an old rift-passive margin setting now in an interior cratonic area – most don't make it this far given the deformation events that get superimposed on top of the margin throughout its history and its amalgamation into the craton," he noted.

Mann and his colleagues who map giant fields expect about 33 giants to be discovered worldwide in the period 2007-09.

– DAVID BROWN

Giant Fields

from page 36

these fields occur."

That also proved challenging. Mann re-examined previous basin classifications devised since the 1960s and '70s, and updated basin nomenclature to be more in line with current thinking on modern plate tectonics and subsurface geology.

As a result, patterns began to emerge.

"We found out that there were two basin types, which account for 60-plus percent of all the giants that exist," he said.

Generally speaking, those are basins with rift or passive margin settings.

"The reason is that these passive margin and rift environments are very stable. If you think of a collisional or a strike-slip environment, it's an unstable and unpredictable tectonic environment for a large oil or gas reservoir to survive," Mann said.

"The preservation potential of giants is greatly enhanced in passive margin and rift environments, especially when they are distant from active plate boundaries," he observed.

An example is the Gulf of Mexico, he said, "which was largely bypassed by the lithospheric-scale tectonic deformation associated with its unstable neighbor to the south, the Caribbean plate."

'An Exciting Database'

Mann's research identified 863 giant fields discovered through 1999. Since then, another 33 new oil giants and 36 new gas giants have been found.

"It's an exciting database that allows us to sort on various properties of the giants, including tectonic setting, reservoir type, source rock, discovery year and many other variables," Mann said.

"We can also place the giants onto plate tectonic reconstructions produced by UTIG's 'PLATES' project and track them through time and space – for example, all giants that share the same late-Jurassic source rock," he noted.

Mann said plots of discovery year show a century-long march of exploration from North America and the Persian Gulf to Asia and the Southern Hemisphere.

"The oldest giant in our list is from 1868," he said. "Many fields achieve giant status long after their original discovery. For example, Ghawar in Saudi Arabia reached giant status in the 1990s but was originally discovered in 1940s."

The largest single group of new giants was found in the rift/collisional setting of the Persian Gulf – six oil and five gas.

Another three new oil and two gas giant discoveries occurred in the rift/collisional setting of the Caspian Sea.

The sag-rift combination appears especially promising for giants, Mann noted.

"We classify them as rift basins because they look to be sag basins overlying older rift basins. It works well because the sag basin either acts as a trap or seal to keep oil in the rift basin, or it can be the reservoir," he said.

Another example of rift-like settings are failed rifts, where separation failed to occur – in the North Sea or Australia's Bass Strait, for example.

"We also use the term second-chance giants. Faulting may breach a lower reservoir but the upwardly migrating oil is trapped in an overlying reservoir," Mann said. "An example is migration out of the Eocene of Lake Maracaibo and into the Miocene in the Bolivar coastal fields.

"The more stacking and redundancy of reservoirs, the more opportunities for second-chance giants," he added. "The Persian Gulf is our densest giant cluster, in part because of multiple reservoirs and seals allowing little escape."

Basin Instinct

Clusters can occur in other types of settings. The collisional basins of western China, where one new oil and three new gas giants have been found, represent a promising area.

"Occasionally you also find what we call lock-box giants, like the Permian Basin, that got sealed over by evaporites and left alone in a cratonic area as plate boundaries moved away," Mann said.

Those exceptional giants are more likely to be encountered in cratonic areas like central Russia, he added.

Understanding basin characteristics will be key to finding future giants.

On Mann's map, the North Slope of Alaska appears promising for a giant-field cluster.

But "northern Alaska does have its problems. It's a foreland basin and those are always riskier since they're an open system at the updip end, so harder to seal. There's also a lot of Tertiary faulting that's breached reservoirs and allowed loss of oil," he said.

That reflects the relative unattractiveness of older basinal settings disrupted by more recent activity. Older basins have the same problem as old oil.

"The longer it sits around, the more that can happen to it, in a negative sense," Mann observed.

Conversely, some areas may become more promising than they first appear.

"There are examples where you had relatively poor onshore deposits and very rich offshore. I think the eastern margin of India is an example of that trend," Mann said.

"Unlike the Gulf of Mexico, where there has been a steady march from onland to shelf to slope to deepwater, eastern India has gone directly to deepwater," he observed. "Now other oil-poor countries with deepwater areas are eager to prove their potential."

The rate of giant field discoveries peaked in the 1960s and '70s, then began a fairly steady decline. Mann said the significant number of new giants found in the past five years is an exception.

"During this period we've had a reversal of the trend. It's exciting to see that the 2000-06 giant discoveries show a small upward spike in the overall

See **Field Clusters**, page 51

Seminars, Field Trip, Reception

Events Aimed at Young Geologists

Are you a student who's anxious to have a good start in your petroleum career?

A recent hire who's anxious to step to the next level?

A corporate recruiter who wants some insight into today's young geologists?

If so, a seminar set for the AAPG Annual Convention should be among your top priorities of things to do in Long Beach, Calif.

"The 21st Century Geoscientist: Developing Interest and Skills for the Next Generation of Geoscientists," is a student/new hire development seminar that will be held from 11 a.m. to 2 p.m. on Sunday, April 1, at the Long Beach Convention Center.

It's one of several activities for students that are planned for the annual meeting.

This seminar is open to all experience levels – undergraduate and graduate students, recent new hire professionals, experienced professionals and corporate representatives looking to better understand recruitment, early skill building and discussion of the issues faced by today's petroleum industry.

In the next 10-15 years over 70 percent of the petroleum industry's geoscientists are expected to retire; this seminar will focus on the key strategies that academia and the petroleum industry need to take to ensure the replenishment of skilled geoscientists.

Four formal morning talks, followed with discussions, will concentrate on:

❒ The Aging Work Force.

❒ Filling the Gap – where will future geoscientists come from?

❒ What is expected from the future geoscientist (major oil companies and independents).

❒ Education/tools/qualifications for the next generation geoscientist.

Other student activities set for Long Beach include:

Friday, March 30

Imperial Barrel Competition – A student competition that boasts a 30-year tradition at Imperial College in London comes to the AAPG Annual Convention, as invited teams from universities around the world compete in a contest to assess the petroleum potential of a specific basin.

Saturday, March 31

The SEPM short course on "Sequence Stratigraphy for Graduate Students," from 8 a.m. to 5 p.m. (continuing on Sunday, April 1), at the Westin Hotel. Instructors Vitor Abreu and Jack Neal, with ExxonMobil Exploration in Houston, lead a course designed to teach graduate students the principles, concepts and methods of sequence stratigraphy.

Monday, April 2

❒ The AAPG Member Plaza and Bookstore/General Store, both in the AAPG Center in the exhibits hall, will open for business.

For students, the Member Plaza is the place to familiarize yourself with AAPG benefits and services, and to meet the membership staff. Apply for membership, pay dues, change your address – and purchase member jewelry.

You also can learn about:

✓ AAPG divisions (Division of Environmental Geosciences, Division of Professional Affairs and Energy Minerals Division).

✓ AAPG student benefits, student chapters and Student Expos.

✓ The Visiting Geologist Program.

At the Bookstore you can buy onsite or order material for home delivery; all books have AAPG member prices, and more than a dozen new publications have been released in the last 12 months.

At the General Store you can purchase AAPG apparel and gifts for the kids – and proceeds benefit AAPG student chapters.

❒ Student Lounge (sponsored by Chevron), also on the exhibits hall floor, offers complimentary refreshments each day during exhibition hours.

❒ The AAPG/SEPM Student Reception will be held from 6-9 p.m., at the Hyatt Regency.

All students and faculty attending the convention are invited to enjoy hors d'oeuvres and refreshments; meet and hear from a ExxonMobil representative; and watch the presentation of the Schlumberger-sponsored Outstanding Student Chapter Award, the Jim Hartman Service to Students Award, the Imperial Barrel Award and the top three poster awards from the Shell-sponsored "Selected Academic Research Topics: Student Presentations."

Wednesday, April 4

The AAPG/SEPM Student Chapter field trip, "Rifting, Transpression and Neotectonics of the Salton Trough, Southern California," will begin at 3 p.m., and conclude at 6 p.m. Friday, April 6.

The trip, limited to students and faculty advisers, visits two world-class geologic exposures in the tectonically active Salton Trough – the remarkable geologic structure of the Mecca Hills and the starkly beautiful Split Mountain Gorge.

Information on all of the student activities can be found online at www.aapg.org. ❒

Spring Student Expo Set March 15-17

The AAPG-SEG Spring Break Student Expo, an annual job fair that brings students and industry-related companies together for formal interviews and informal networking, will be held March 15-17 at the University of Oklahoma's School of Geology and Geophysics in Norman, Okla.

There's free registration for AAPG and SEG members.

To register online, and for more information, go to http://geology.ou.edu.

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Alaska GeoTour (June 2 - 11, 2007) Anchorage to Fairbanks

This is a scenic and geologically fascinating South to North transect of Alaska across three mountain ranges to the Arctic Ocean and the Prudhoe Bay oil field — the largest oil field in North America. This trip will appeal to geologists and nature-lovers alike, as you will see parts of three national parks, active glaciers, wildlife, wilderness, the Prudhoe Bay field, and end with an aerial crossing of the Brooks Range by light two-engine aircraft. Space is limited to 22 participants. Please, take advantage of the early bird rate of $3,295 ($3,395 after April 20, 2006). Call 1-888-338-3387.

The AAPG Bulletin is the premier peer-reviewed petroleum geology journal in the industry today. With nearly 2,100 pages of science published annually and ciculated digitally* and in print to over 32,000 recipients each month it is, by far, the best venue available to stay abreast of the science of petroleum geology as well as a fantastic vehicle to publish through. We would publish more if we could!

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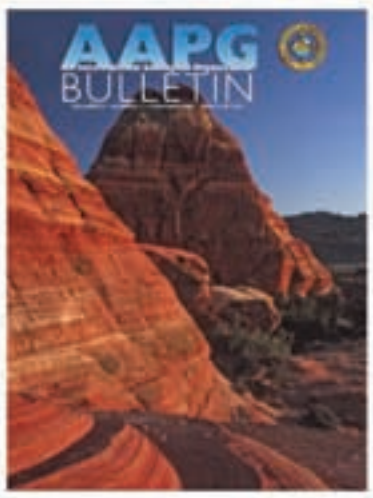

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Price Isn't Driving Exploration

'Unconventional' Depends on View

By LOUISE S. DURHAM
EXPLORER Correspondent

Recent, somewhat dramatic price swings in oil and natural gas futures have done little to dampen the overall optimistic outlook pervading the industry.

Still, volatility historically has been an indigenous component of the business, and a tad of caution is a good thing.

In fact, you might say cautious optimism will be a central theme of the DPA luncheon talk, "Mapping the Global Route of the Energy Industry," to be presented at the AAPG Annual Convention by Robert Ryan, vice president of global exploration at Chevron.

"We tend to hear that the easy oil and gas has been found," Ryan said. "But that comment usually focuses on what is considered conventional oil and gas.

"When you consider the current list of unconventional hydrocarbons, heavy oil and oil sands, for example, there is a tremendous resource base in the world," he noted. "In fact, a survey of government, academic and industry reports might lead you to the conclusion that trillions of barrels of oil have already been found and are just waiting to be developed.

"There are a lot of hydrocarbons – they just tend to be a little different from what we typically thought of in the past.

"The sky is not falling," Ryan added. "I believe the industry is fully prepared to meet the challenges of the world's energy needs – we just probably have to look at it through a different lens than in the past because of the unconventional component."

"There are a lot of hydrocarbons – they just tend to be a little different from what we typically thought of in the past. The sky is not falling."

The Price of Price-Watching

If the energy demand forecasts hold true, the industry will be successful in meeting those forecasts when the unconventional becomes conventional, according to Ryan.

He noted a time in the past when the deepwater was included on the unconventional list in some circles.

Ryan also emphasized that it's naïve to think one energy source sets the course for the future, noting that oil and gas (both conventional and unconventional), coal, nuclear and renewable fuels all play a role.

Relative to oil and gas, access can be a big issue.

For instance, many prospective areas are off limits to drilling in the United States, making it difficult to increase the domestic supply and achieve the stated goal to reduce the volume of imports.

Access looms as a growing problem in far-flung parts of the world as well, where the challenges often extend beyond acquiring permission to stake a claim in a specific locale – extremely high lease bids, low contractor takes and the potential for nationalization present their own kind of thorny access challenges.

> Robert N. Ryan Jr., vice president of global exploration for Chevron Corp., will be the featured speaker at the DPA Luncheon, at 11:30 a.m. Tuesday, April 3, during the AAPG Annual Convention in Long Beach, Calif.
>
> Ryan's talk will be on "Mapping the Global Route of the Energy Industry."

Although commodity prices always impact projects, Ryan emphasized the industry isn't letting high prices drive the exploration business.

"Oil price doesn't change the rocks," he said. "If a prospect is poor from a technical perspective, oil price doesn't make a difference – it doesn't change the quality of the prospect.

"Years ago as an industry we reacted to high prices, and increased the number of high risk prospects drilled due to that price," he said. "Then we wondered why there were so many dry holes.

"But the industry is smarter," he noted. "When asked now if we can increase exploration drilling and investment above current levels, I answer 'not necessarily, as exploration is a learning business and has its own pace.'

"You can't make exploration decisions based on the ebb and flow of oil prices."

NOT Your Father's Career

Given the dearth of university students opting to concentrate in the earth sciences curricula, it comes as no surprise that this industry veteran expressed concern about the future of the industry.

Specifically, the question is begged: Who's going to be around to make it happen?

"I asked a freshman engineering student what the talk was amongst the newly arriving engineering students in relation to the oil and gas industry," Ryan said, "and she answered, 'It's what our fathers did.'

"We need to make sure the next generation of potential earth scientists and engineers understand this is an extremely high tech business that's full of great professional challenges," he said.

"We have an obligation to make sure the industry has the technical talent it needs going forward." ❑

Resource Commodities Under Pressure

China, India Demands Hit Home

By DIANE FREEMAN
EXPLORER Correspondent

As the massive economies of China and India tap into valuable mineral resources worldwide, the fallout is stretching far beyond the Asian geographic sphere of influence.

How far? Think the U.S. West.

Specifically, those needs mean that communities in Colorado and other states are confronting mineral shortages, according to Vince Matthews, state geologist and director of the Colorado Geological Survey.

Matthews, an AAPG member, said he first began to notice the impact of China's and India's demands on Colorado a couple years ago.

"There are some startling statistics on recent mineral prices and I began to follow those, Matthews said. "I had also given a talk on energy and thought it might be fun to pull some of these numbers. But the more I looked at it, the more shocking the effect I found.

"It has adverse effects on Colorado and every other state," he said.

Matthews will be speaking on this subject at the AAPG Annual Convention in Long Beach, Calif., as the guest speaker for the Energy Minerals Division luncheon.

As the state geologist, Matthews and his office is charged with promoting responsible production of mineral resources here.

"That means that anything that affects demand affects us," he said.

"We have communities on the western slope of Colorado that are being told they won't be able to get rural electricity because of a shortage of core steel due to China," he added.

The Big Driver

In the last 15 years the world has increased its use of electricity by six terrawatts (a trillion watts); according to Matthews, China, India and the United States account for 3.4 terrawatts – more than half – of that amount.

"China is the big driver in this," he said. "Yet there's another half that comes from the rest of the world, from Bangladesh to Africa. The population keeps growing everywhere, although China has put some limits on its population growth.

"It's ironic that there is a shortage of molybdenum here, yet Colorado is the major producer of molybdenum in the nation," he said (it's used as a hardener for steel). "There are companies here that have trouble getting it because China needs it."

A cement shortage in Colorado also is due directly to the demands of China, and "many other things like that are affecting us as well," Matthews said.

Although China's growth has been fairly steady, there has been a huge increase in demand since 2003.

"We've seen a real explosion in China in their use of raw materials and global shortages," he said. "When you look at prices of virtually every commodity from selenium to titanium, all have exploded since then. Some have dropped back in price to where they're only seven times what they were in 2003. But I certainly think in the next decade it will be a tight market in all of these."

Because the demand is worldwide it affects raw materials in Colorado and every other state, he said.

"In Colorado we particularly need to think about it because we're so rich in natural resources," he said. "There's a global shortage of minerals, and people are looking here."

Vince Matthews, state geologist and director of the Colorado Geological Survey, will speak on "China and India's Ravenous Appetite for Natural Resources" at the Energy Minerals Division Luncheon during the AAPG Annual Convention and Exhibition in Long Beach, Calif.

The EMD luncheon will begin at 11:30 a.m. Wednesday, April 4.

Skyrocketing Demands

In his EMD luncheon talk Matthews will show statistics and give examples of the skyrocketing demand for minerals.

"There are a lot of things people aren't aware of," he said. "In the U.S. we have increased our generation of nuclear power in the last 10 years but we haven't built any new plants. Most people aren't aware we are by far the leading producer of nuclear power in the world. That means we'll be doing even more nuclear power. However, there's a shortage in uranium and the price keeps growing.

"Very few people are aware of this," he continued. "They're aware that there's a shortage of oil and natural gas, but they're not clear why there's so much drilling in Colorado."

Both China and India are drastically increasing their use of all natural resources. Although China has large resources of its own, they are insufficient to fill the internal demand, he said.

Since 2001 the price of nearly every natural resource commodity has escalated enormously to meet the demand of these two countries' exploding economies, he said.

Matthews has served as an executive in the natural resources industry for Amoco, Lear, Union Pacific and Penn Virginia, exploring for oil and gas in virtually every basin in the United States. ❑

'One Big Dude'

TOTY Won Taking It to the Streets

By SUSIE MOORE
EXPLORER Staff Writer

Tulsa native Ryan Henry made history in two ways when he was recently named the winner of the 2007 AAPG Teacher of the Year.

The first way is biographical: At 27, Henry is the youngest person ever to receive the TOTY award, which is sponsored annually by the AAPG Foundation to promote earth sciences education.

And in keeping with his age, he had the perfect phrase when told he was the youngest recipient ever. "That's awesome!" he laughed.

The second way, however, is perhaps even more unusual: Henry is being honored for his efforts while teaching at Street School in Tulsa – not a typical setting when one thinks of earth sciences.

Henry, who recently moved with his family to teach in Denver, was nominated by the Tulsa Geological Society (TGS) and will be honored on Monday, April 2, during the All-Convention Luncheon at the AAPG Annual Convention in Long Beach, Calif.

He will be honored for teaching all science classes offered at Street School, including: physical science, biology, earth science and geology.

"Holy cow! I'd like to thank you guys for recognizing teachers," he said. "I mean, this is the kind of thing that keeps people fired up!"

As Teacher of the Year, Henry will receive $5,000 from the AAPG Foundation; $2,500 goes to Street School in Tulsa for educational use under Henry's direction, and the other half is for his personal use. He also receives an all-expense paid trip to the annual convention in Long Beach, Calif.

Born and raised in Tulsa – in a nature boy sort of way – Henry grew up backpacking, canoeing, swimming in creeks and going on family ski trips in Colorado. And, like a lot of teenagers, his outlook on school, higher education and life was an aimless trajectory – he was going somewhere, he just didn't know where.

"What got me through high school was basically sports and art," he said. "It was the active things."

That all changed when he began taking geology classes at the University of Arkansas in Fayetteville, and he recalled geology professor Ronald Konig connecting to him with the words, "The earth is one big dude."

"From then on," Henry said, "I was hooked on geology."

'On Fire for Teaching'

Henry eventually received both his bachelor's degree in earth science (2003) and master's degree in secondary science (2004) from UA, and he credits geology with being the inspiration for his entire education.

"Every class had a field trip," Henry said, "and we would actually study the things outside that you talked about in the classroom. That was really kind of the point where I was like, 'Wow, this is what learning is like!' And, learning can be so much fun!"

Still, Henry didn't put much thought into teaching earth science until he was invited to help teach a fourth grade class about minerals and volcanoes during AGI's Earth Science Week.

"I had a great time!" he said.

During his master's program, Henry taught at the Lake Fayetteville Environmental Study Center, as well as at the Springdale Public School District in Arkansas.


Henry

With the guidance of his advisers, Henry came out of the UA MAT program "like a veteran teacher," he said. And when he landed the science teaching position at Street School back in his hometown he "was on fire for teaching!"

Street School is an alternative school of choice program for Tulsa youth ages 14-19, providing "at risk" students an opportunity – one they otherwise might not get – to receive a high school diploma.

Henry, who uses expressive words such as "cool," "neat," "amazing" and "awesome," said he kept his students motivated by teaching them things that were relevant.

"I tried to make a connection to their life," he said. "I probably spent 40-50 percent of class, especially my geology classes, in the field studying the things we had talked about in class.

"I spent a lot of time focusing on natural resources."

Always the grateful student, Henry implemented into his classroom teaching the theory from his former UA professor, Walter Manger: "Geology is learned by the soles of your shoes, not by the seat of your pants."

"Street School was a perfect place for blending my love of hands-on inquiry-based science," he said, "and my love for experiential outdoor learning."

'A Positive Difference'

While at Street School, Henry started and wrote a grant for a program he named "Wilderness Adventures." This program provided all Street School students the chance to enjoy climbing, canoeing, camping and mountain biking over one- to four-day expeditions.

In fact, the day after he married his wife, Katie, they led a group of students they had been working with all year on a three-day canoe trip on the Buffalo River in Arkansas.

Last summer, Henry moved to Denver to teach his "one true love," earth science, as part of the seventh grade curriculum for Graland Country Day School.

Is there hope for the future of education?

Henry thinks so – and he's committed to the cause.

"I knew I wanted to make a positive difference in the world," Henry said.

"We (teachers) are more than just purveyors of knowledge," he added. "We as a country need to reprioritize our commitment to education. Education is the only way to get better and it's sad there's not more emphasis."

Since the birth of his newborn son, Lief, Henry has pondered the idea of getting a master's in geology and working summer internships in the industry as a geologist.

"I'd love to maybe get out and actually work as a geologist for a while," he said, "and go back to teaching once my son gets to that age where we can start taking big, fun family summer trips." ❑

Agendas Taint Climate Debate

Gerhard Urges a Look At the Facts

By KEN MILAM
EXPLORER Correspondent

Lee Gerhard has a challenge for you:

"Defend the sciences … Do a better job of critical reading and analysis. Separate fact from agenda."

Gerhard is speaking about "Energy and Environmental Challenges of the 21st Century," which happens to be the title of his upcoming luncheon address to the Division of Environmental Geology at AAPG's Annual Convention in April at Long Beach, Calif.

"We deal too much with public myth and not enough with hard data," Gerhard said.

With more than 40 years in geology and environmental studies – including helping develop DEG – Gerhard is not shy of controversial topics or opinions.

"The sciences and the public are imbued with computer models instead of observational data," Gerhard said of the ongoing climate change debate.

Models, he said, often include assumptions that may or may not be correct.

"This is a huge issue in anything we look at," he said.

Some examples:

✓ Polar bears are proposed for listing on the Endangered Species List because of apparent climate and environmental factors – but their numbers are as high as at any point in history, he said.

✓ Radon gas was trumpeted as a threat in home basements across the United States when studies showed the only population experiencing adverse effects was quarry workers who smoked tobacco – a group already at risk of lung problems, he said.

✓ All types of asbestos were called risky and subject to expensive cleanup regimes and litigation, Gerhard said, though research showed clear differences in the effects of different types of the material.

While "public myth" often pictures mankind as losing the global environmental battle, Gerhard said that "from the 1960s onward, we have improved the U.S. and global environment – otherwise we'd still have a flaming Cuyahoga River," a reference to a heavily polluted river through Cleveland, Ohio, that occasionally caught fire.

The planet's growing human population is another main theme for Gerhard.

"We are facing a 10 billion population future world," he said. "We must supply energy resources for them and maintain adequate standards of living, despite declining resources – all within acceptable environmental impacts.

"The human 'footprint' is unique among animals," he added. "We have the ability to modify our environment and to tap and use resources no other animal can use."

Gerhard's third major challenge to AAPG and DEG in particular: Heed the "Law of Unintended Consequences."

"Political choices often ignore the long term," he said.

For example, in the search for alternate energy sources, ethanol is popular but not always cost-effective.

In Bolivia, crushed sugar cane is used to produce ethanol. "It's a very efficient way to produce fuel using a spent product … waste," Gerhard said.

In contrast, ethanol produced in the United States may have only a slight cost advantage, "depending on how you count cattle feed, increased food costs" and other factors, he said.

"In western Kansas we're using valuable water … (and) growing produce to produce energy," the former Kansas state geologist and head of the Kansas Geological Survey said. "It's a great farming program" – but ignores the long-term consequences of draining the Ogalala Aquifer, increased erosion from irrigation and other concerns.

In the debate over drilling in Alaska and offshore United States, we must make a choice of "adequate vs. inadequate supplies and the consequences of both," he said.

"We have to find out if there's any oil there," he said of the debate over drilling in Alaska's Arctic National Wildlife Refuge.

Looking ahead, he cautioned that "we have to focus our decision-making."

Gerhard urged DEG "to look at bigger issues – educate the public and our decision makers." ❑

Lee Gerhard will present the talk "Energy and Environmental Challenges of the 21st Century" at the Division of Environmental Geosciences luncheon during the Annual Convention in Long Beach, Calif.

The luncheon will be held at 11:30 a.m. Wednesday, April 4, at the Hyatt Regency Hotel.

Gerhard, an AAPG Honorary Member of AAPG, is a founding member and past president of DEG.

Once Again, A Winner

NAPE Crowd Shows 'Savvy' Side

By LOUISE S. DURHAM
EXPLORER Correspondent

Once again, the North American Prospect Expo can be declared a winner.

The early February event at the George R. Brown Convention center in Houston, sponsored by the AAPL and its NAPE partners, AAPG, SEG and IPAA:

✓ Drew a record crowd of 14,482 attendees.

✓ Had 885 exhibiting companies (including a number of international firms).

✓ Attracted 1,450 exhibit booths.

The event is the undisputed kingpin of prospect expos – but that's only part of the respected role it plays in the industry.

"NAPE is *the* networking event of the petroleum industry," said Lee Billingsley, AAPG president and vice president of exploration at Abraxas Petroleum Corp., which has had a booth at NAPE occasions from the get-go.

"The people attending represent so many aspects of the business – land, money, geoscience – it's really a hugely important networking event," he said.

The expo kicked off with the IHS-sponsored International Forum, which included an International Prospect Promotion Forum. The day concluded with an Icebreaker, which was "jam-packed, shoulder-to-shoulder", according to geologist Gerritt Wind of Wind & Associates.

The crowd in the prospect exhibit hall was the expected mix of E&P companies, service companies and financial entities. A flock of small, newly formed E&P companies was evident, which is typical when times are good in the industry.

This time around, however, the new entrants themselves are not necessarily typical.

"These small companies now are financially and technically savvy about the industry," Billingsley said. "It's not like a bunch of 'shoe salesmen' wanting to do deals in the mid-1980s. These are financially knowledgeable people trying to make good investments."

'Very Upbeat'

Although prospects do get sold on the spot at NAPE, usually the deals are cut later after a thorough review in an office setting.

On the other hand, a number of deals have been known to close before making it to the show – using what Billingsley refers to as the "NAPE Stick."

"If you say you're going to show your prospect at NAPE, then you're using the threat of a NAPE-like stick," he said. "That's one of the values of the expo – you can show prospects ahead, and just the mention of showing it at NAPE will force a decision."

One of the smaller companies that first hit the scene at NAPE with a booth a couple of years ago continues to have a presence there. They call themselves The Unconventionals, and they zeroed in on the potential for shale gas several years ago before it became the really cool thing to do like today.

"We're doing very well," said Frank Maio, who bills himself as "head honcho" of this band of geologists, geophysicists and engineers. "We have some deals here we generated in the Antrim shale in Michigan, the Marcellus in Pennsylvania and the Floyd in Alabama.

"There's been an evolution in who might buy a deal," Maio said. "New companies are wanting shale gas, and everyone – big and small – wants resource plays. There's a whole new tier of potential buyers."

It's noteworthy that NAPE has the potential to cause companies to become interested in prospects in a region that previously held no interest for them.

For instance, Benchmark Oil & Gas was showing its first Alaska-based prospect, and company president Robert Pledger noted a large public company came by and was evaluating the prospect, whereas they wouldn't have considered Alaska before that.

Some of the prospects on display each year reveal more than a tad of humor – Oakmont Minerals, for example, was showing its Dumbo prospect. When queried about the name, petroleum consultant Dan Muth replied "We're looking for elephants, and who's the most famous elephant you know?"

So what can be expected for an encore after this record-breaking NAPE?

"This was our fifteenth show," said Robin Forte, executive vice president of AAPL," and it's grown each year in attendance. "This time, we had 11.5 percent growth in attendees over last year, and we think it will grow again next year.

"It's big enough that having it go well and smoothly is a big deal to us," Forte said. "The response from the participants was 'great traffic, lots of deals bought and sold, lot of networking accomplished, very upbeat.'" ❑

For more information on this subject, visit the AAPG Web site.

AAPG would like to thank Chevron for its sponsorship of student membership dues.

GEOPHYSICAL CORNER

Why Do P-Wave Wipeout Zones Occur?

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

By BOB HARDAGE
MICHAEL DeANGELO
and DIANA SAVA

One hydrocarbon exploration application that has caused multi-component seismic data to be acquired across several offshore areas is the ability of the converted-S mode to image geology inside broad, thick intervals of gas-charged sediment where P-P seismic data show no usable reflections.

The term **P-wave wipeout zone** is often used to describe this imaging problem.

Numerous examples of P-wave and S-wave images across P-wave wipeout zones have been published, but the rock physics cause of the P-P imaging problem usually is not discussed.

* * *

One example of differences between P-P and P-SV images of stratigraphy and structure inside gas-charged sediment is shown in figure 1.

The P-wave wipeout zone shown here extends about two kilometers (from CDP 10,000 to CDP 10,150) and is small compared with some P-wave wipeout zones, which may span several tens of kilometers.

Visual inspection of these images shows that the P-P mode provides poor, limited information about geological structure, depositional sequences and sedimentary facies inside the image space dominated by gas-charged sediment between coordinates 10,000 and 10,150.

Conventional seismic stratigraphy (P-P mode only) would have little success in analyzing geological conditions within this poor-quality P-P image area. In contrast, the P-SV mode provides an image that is sufficient for structural mapping, as well as for analyzing seismic sequences and seismic facies.

These increased interpretation options are obvious advantages of multicomponent seismic data and elastic wavefield stratigraphy over single-component seismic data and conventional P-wave seismic stratigraphy in regions where gas-charged sediments are common.

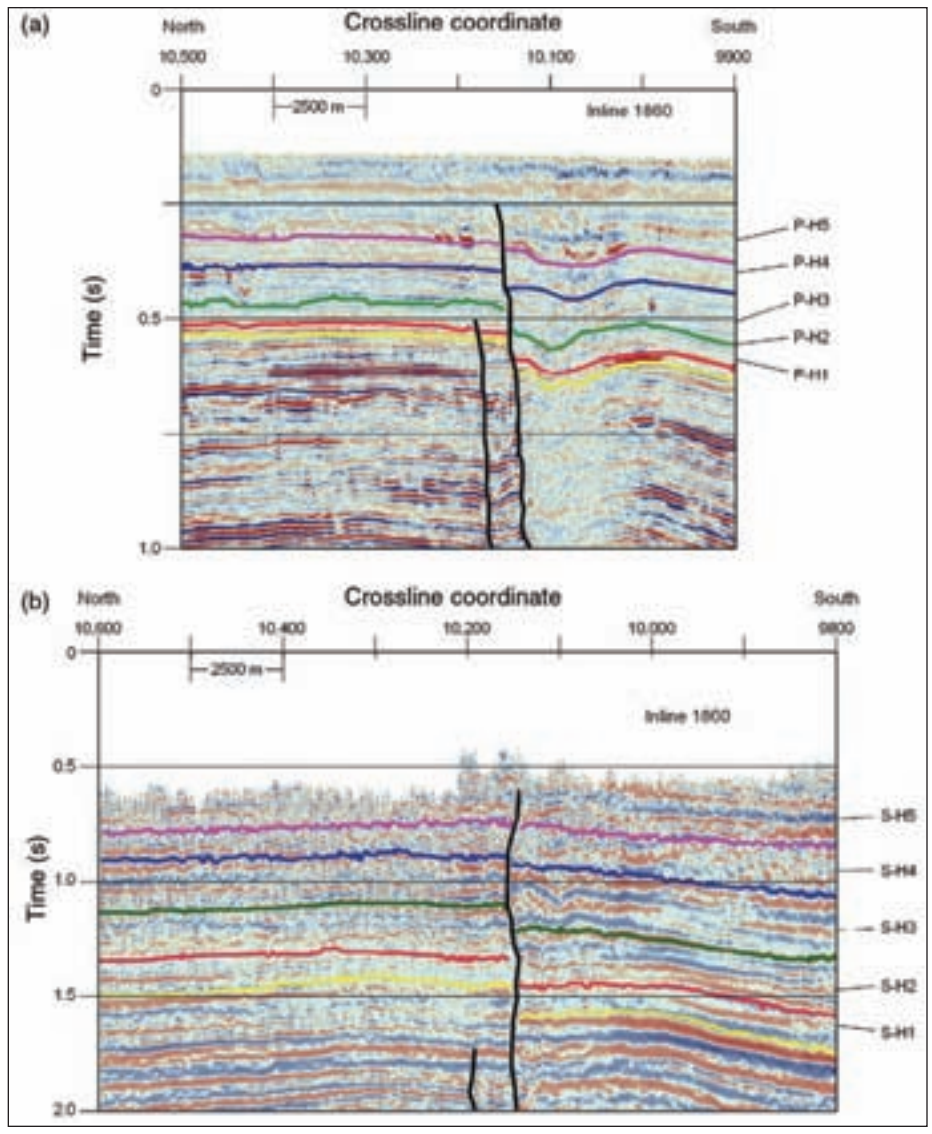

Figure 1 – P-P image (a) and P-SV image (b) across gas-charged Gulf of Mexico sediments that are lithified and stratified. P-P horizons P-H1 through P-H5 are interpreted to be depth equivalent to P-SV horizons S-H1 through S-H5. A P-wave wipeout zone extends from CDP coordinates 10,000 to 10,150. P-SV data (b) image geology quite well inside this zone.

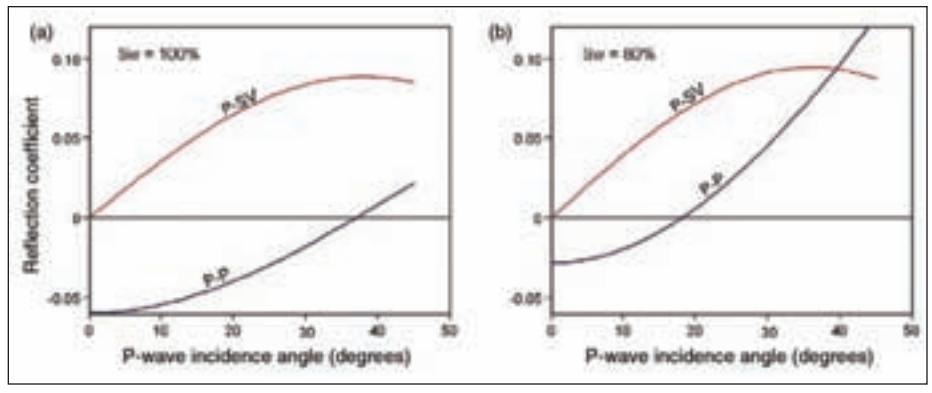

Figure 2 – P-P and P-SV reflectivities for (a) brine-filled and (b) gas-charged sediment.

A simple Earth model consisting of a shale layer atop a sand layer can be used to evaluate P-P and P-SV reflectivity behaviors for the types of siliciclastic rocks that occur across the Gulf of Mexico, where P-wave wipeout zones are common.

Two pore-fluid situations will be considered:

✓ Both layers have 100 percent brine saturation.

✓ Both layers have a mixed pore fluid of 80 percent brine and 20 percent gas.

Well-established rock physics theory can be used to determine seismic propagation velocities and bulk densities for these fluid-sediment conditions.

* * *

P-P and P-SV reflectivity curves calculated for typical pore-fluid conditions are shown in figure 2.

When the pore fluid is 100 percent brine, P-P and P-SV reflectivities have opposite algebraic signs but are approximately the same average magnitude (about 5 percent) for incidence angles ranging from 0 to 25 degrees (panel a). When the pore fluid changes to 20 percent gas (panel b), P-SV reflectivity is unchanged, but P-P reflectivity has a smaller magnitude and undergoes a phase reversal that essentially eliminates the P-P response across the first 30 degrees of the incidence-angle range.

P-SV imaging, thus, is not affected by the gas-charged sediment, but P-P imaging is seriously degraded. The effect on P-P and P-SV images would be similar to that exhibited by the data in figure 1.

Simple reflectivity analysis thus often explains much of the reason for degradation of P-P signal inside regions of gas-charged sediment and for the lack of negative impact of gas-charged sediment on P-SV signal.

One conclusion is that multicomponent seismic data and elastic wavefield stratigraphy are not just helpful for studying geological conditions across P-wave wipeout zones; they are essential.

(Editor's note: Hardage, DeAngelo and Sava are all with the Bureau of Economic Geology, the University of Texas at Austin.)

WashingtonWATCH

Students, Schools Aid Get Push

By DON JUCKETT
GEO-DC Director

This month I want to highlight three items for member attention.

❒ The first is to frame an effort by a group of organizations concerned about the long-term prospects of faculty and students in the natural resources geoscience and engineering universities. As we think about what it will take to sustain and grow our profession – and with it, professional associations like AAPG – we must consider what is required to attract the brightest and the best students into the established institutions of higher education.

This effort began in earnest in the 109th Congress, when the Energy and Mining School Reinvestment Act (EMSRA) was included as part of the House language H.R. 4761 – Domestic Energy Production through Offshore Exploration and Equitable Treatment of State Holdings Act of 2006.

While parts of H.R. 4761, including EMSRA, had strong bipartisan support, other more controversial parts and late introduction in the 109th Congress precluded any action on the EMSRA legislation. The Senate legislative language, which dealt only with Sale Area 181, passed as part of the larger tax bill H.R. 6111.

In late January a group of association and university representatives, including AAPG and AGI, gathered to initiate strategy discussions on the reintroduction of EMSRA legislation in the 110th Congress. The group agreed to initiate their activities with two significant activities. The first is to assemble a catalog of briefing material reflecting the state of the institutions and disciplines potentially impacted by the legislative initiatives.

This will require significant work not only in preparing succinct one page summaries of the state of various disciplines and institutions, but also some serious analysis of demographics and projections of future needs.

The group of universities and associations will be reaching out to their members as the effort matures for active support. I hope that AAPG members will continue to grow their effort.

❒ Back-to-back sessions on Wednesday morning, April 4, at the AAPG Annual Convention in Long Beach, Calif., will focus on issues that affect the Association.

An AAPG Forum: The Washington, D.C., Office, will explore the first 18 months of our GEO-DC office and provide an opportunity to discuss its future.

The session that follows, "Beyond the Science: Geopolitics and the Energy Industry," will explore the role of geopolitics and its influence on energy markets through the eyes of several invited speakers addressing resources, reserves, industry manpower and security, climate change and political price premiums in the market.

Invited speakers include:

✓ **Don Paul**, vice president for research for Chevron and the chairman of the current National Petroleum Council's Global Oil and Gas Study.

✓ **Dan Tearpock**, AAPG member and CEO of Subsurface Consultants and Associates, who will provide a view of national and global manpower issues, analyzing past trends and events and projecting the future needs and issues.

✓ **Michelle Foss**, chief energy economist and head of the Center for Energy Economics at the University of Texas, Bureau of Economic Geology and a past president of the International Association for Energy Economics, will address market-related influences that impact the ebb and flow of world energy markets.

✓ A representative from the SPE Oil and Gas Reserves Committee will speak about the new reserves definitions and guidelines adopted by the SPE/AAPG/WPC/SPEE in an effort to standardize practices within the international community.

The "Beyond the Science" session will conclude a panel/audience discussion and a question/answer session of the material presented.

Throughout the sessions participants will be treated to the scope and impact of these activities and will have the opportunity to see where AAPG members have made contributions to each of these important areas.

❒ Finally, don't forget about these:

✓ May 1-2 is Congressional Visits Day (CVD), when AAPG members will visit elected law makers in Washington as part of the Annual Institute of Electrical and Electronics Engineers Science, Engineering & Technology event.

This year's theme is "Science, Engineering and Technology: Fueling America's Innovation."

AAPG's GEO-DC office became a sponsoring organization for the CVD event last year, and this year we anticipate that twice as many members will participate as were present for the 2006 event.

✓ June 24-26 we'll have the AAPG/SPE Multidisciplinary Reserves Conference, at the L'Enfant Plaza Hotel in Washington, D.C.

The purpose of this conference is to engage the users of reserves and resources data – corporate management, accounting, banking, investors and government – in active discussions with technical professionals who define and generate these estimates.

✓ Please take a look at a new feature added to the GEO-DC page on AAPG's Web site titled "Recent Events." We will be using that site to keep members informed of breaking news and events in Washington.

(Editor's note: Don Juckett, head of AAPG's Geoscience and Energy Office in Washington, D.C., can be contacted at djuckett@aapg.org, (703) 575-8293.)

Copyrights Serious Matter for AAPG

By BEVERLY MOLYNEUX
Technical Publications Managing Editor

Did you know that the U.S. Constitution addresses the concept of copyright protection as being important in order to "promote the Progress of Science and useful Arts"?

Copyright, a form of intellectual property law, protects original works of authorship including literary, dramatic, musical and artistic works, such as poetry, novels, movies, songs, computer software and architecture.

How does that apply to petroleum geology?

AAPG's own constitution dictates we facilitate the dissemination of petroleum geology knowledge – and one of the best ways of fulfilling that dictate is to assist scientists in the authorship and publishing process.

U.S. copyright law protects your written expression of facts, ideas, systems or methods of the geology you study and work with. While every country's copyright laws are different, if you author an article or paper, in the United States you are considered the owner of your material.

There are a few exceptions to this generalization, though, such as authors who write material at the behest of their employer or government.

After you have created your paper or article and if you want to publish your material, the vast majority of publishers will ask you to transfer copyright ownership over to them prior to publishing.

AAPG does this itself; the reasons for that are two-fold.

✓ First, AAPG asks authors to sign a transfer of copyright form so the collective work – whether it is an issue of the BULLETIN or *Environmental Geosciences* or a Memoir – can be registered with the Register of Copyrights at the U.S. Library of Congress. The entirety of the work is then protected under U.S. law.

AAPG also protects its publications by requesting that authors working on papers for AAPG seek written permission from copyright holders for any material contained in the paper that has been previously printed elsewhere. A Permissions Request Form is located online at www.aapg.org/pubs/index.cfm and must be forwarded to AAPG once permission has been obtained.

When AAPG is considered to be the author, such as with any of our printed or digital Reprint Series, we also go through this request process with other publishers, so what we are reprinting is done with permission of the copyright holder addressing the rights of the original authors.

✓ Second, with the registration of copyright, AAPG is able to oversee the use by others of material contained within AAPG copyrighted publications.

We encourage the use of material contained within AAPG publications by authors in order to disseminate scientific information, bearing in mind all material is properly acknowledged.

AAPG considers fair use to be a single figure, a brief paragraph or a single table from an AAPG publication in a paper in another print publication, provided proper citation appears with the reproduced item crediting the original authors.

Electronic use of author work published with the AAPG, such as inclusion in presentations, does require contacting the AAPG. We are able to provide digital copies of most published items – however, permission should always be sought prior to use.

If you as an author plan on using any material from AAPG publications that falls outside fair use, simply submit a written request that includes your contact information, identification of what you wish to use and details about your intended use of the material.

(For specifics on the process go to www.aapg.org/pubs/aapgcopyright.cfm.)

The U.S. government provides information about copyright in the United States at www.copyright.gov. ❑

The American Association of Petroleum Geologists has announced an agreement with a major E&P vendor outlining terms of use for AAPG's copyrighted publications.

Specific terms of the agreement were not disclosed; however it does allow for the vendor to make very broad use of material from AAPG's publications in the development of its commercial products and services.

AAPG Executive Director Rick Fritz stated that, "such an agreement is important to maintain the integrity of copyrights that have been entrusted to us by our members and others within the global scientific community. AAPG's underlying mission is to advance the science of petroleum geology, (and) we do this through many means – including publications."

Field Clusters

from page 38

discovery curve that has been in decline since the 1970s," he said.

Horn said other trends in giant field discoveries include more gas giants in relation to oil giants, a shift to more stratigraphic plays and a move to deeper water marine environments.

"Gas giant field discoveries have now surpassed oil giant fields, and that trend is continuing. We're discovering more gas now," he said.

One positive sign comes from new giants found in eastern China, India and Myanmar, which could lead to more success, Mann said.

"Just in the past few years they've made some giant field discoveries, so these could be new clusters emerging," he explained.

Mann and his colleagues project the discovery of another 33 new giant fields during the rest of the decade. That would make 2000-09 the third-highest discovery decade in history.

But the overall decline in the discovery rate for giant fields continues, he noted. And few large frontier areas remain for giant-sized elephant hunting – Antarctica and the Arctic, Mann suggested.

"Overall, the globe is shrinking under this latest wave of exploration, so we may be reaching the end of the rope as to where the new clusters may be," he said.

For the industry, elephant-hunting involves a choice between established cluster areas of large fields and promising new areas not fully developed.

"You don't want to give up finding new giants, but you also don't want to give up exploring these known clusters," Mann said.

"The real frontier seems to be the continental margins," he added.

Eliminate the huge area covered by the ocean floor and you find almost all the petroleum clustered into just 30 percent of the Earth's land surface.

That brings up a sad fact about global oil and gas resource distribution.

Them that got it, got it.

Them that don't, won't.

"The unfortunate truth is that oil and gas is unevenly distributed over the Earth's surface," Mann said.

"It would be great if every country had its own cluster, but it didn't work out that way." ❑

IN MEMORY

Warren Jackson Cage Jr., 80
Georgetown, Texas, Nov. 13, 2006

Willis Mansfield Decker, 91
Roswell, Ga., Jan. 10, 2007

Anthony Michael Evans, 57
Reading, England, Dec. 30, 2006

William Sweitzer King, 80
Bakersfield, Calif., Dec. 11, 2006

Theodore David Lee, 56
Puyallup, Wash., Oct. 24, 2006

Marvin Lee Oxley, 72
Jackson, Miss., Oct. 18, 2006

Fred Lee Stricklin, 81
The Woodlands, Texas
Dec. 25, 2006

Wayne Elwyn Swearingen, 82
Tulsa, Nov. 13, 2006

Robert Kruse Taylor, 78
Dallas, Jan. 9, 2007

(Editor's note: "In Memory" listings are based on information received from the AAPG membership department.)

More Information, Easier to Access

Libraries Changing With the Times

By KAREN PIQUNE
AAPG Geoscience Librarian

Old school tradition: A "library" is a physical place where you can find information on a specific topic, by a particular author or fictional literature.

New world reality: Who needs a physical place?

The fact is, for now anyone may still need the physical place, depending on what's being sought.

But with the advent of multi-media, digital data, the Internet, online access, etc., libraries are redefining and going far beyond the traditional definition. This, understandably, has caused some confusion as to what "library" has, physically available, what kind of data is available and how these resources are accessed.

Utilizing Geoscience Information

Geoscience data can be grouped by media (paper/film, digital or the physical objects); the physical material on which the data is housed; or by context, relating to how and why the data was created (see accompanying table).

Today's geologists can utilize the resources of three basic types of libraries – traditional libraries, libraries housing derived data and libraries housing the physical data.

Traditional libraries consisting primarily of published data are the libraries many of us grew up with. Examples are public, university, governmental (including the U.S. and state geological surveys) and corporate libraries.

Corporate libraries house much of a company's propriety data as well as published data collected for the use of employees. Including corporate produced reports and derived data resulting from exploration and production efforts, a huge volume of subsurface data belongs to major oil and gas companies.

Unfortunately, periodic shake-ups plus company mergers and demises have put much of this information in jeopardy. Even if a company is willing to donate its accumulated geoscience repository, the recipient institution may not have the financial or physical resources to house the material.

(In 1994 Shell Oil donated its core facility to the University of Texas at Austin – along with a cash sum to help house the material. Perhaps this can serve as a template for future donations of privately held data to public institutions.)

Derived data libraries are sometimes referred to as well log libraries, or energy libraries, but they can come with a variety of names. Energy libraries are open to the geologists regardless of corporate affiliation but require membership fees to use. These libraries are geographic specific in the extent of materials they house. (See December 2006 EXPLORER, page 40-41).

Geoscience Data Categories

	Paper/film	Digital	Physical
Media: The physical material on which data is stored			
Examples	hardcopy books, journals, reports, well logs, lithology logs, scout tickets, seismic lines, maps, photographs, tabular & graphic production data, films, videos, sound recordings, slides	CD-ROMs, DVDs, Online data sources	well cores, well samples, fluid samples, rock samples
Context: The how and why the data was created			
	Published Data	**Derived Data**	**Objects**
Examples	hardcopy or digital books, journals, articles & reports (with included illustrations, maps, cross sections, seismic, sections, photographs, and tabular data) maps, videos, sound recordings, slides	Hardcopy or digital well logs, lithology logs, scout tickets, seismic lines, drilling and completion reports, production histories, maps	well cores, well cuttings, thin sections

AAPG Resources

With all these resources it is easy to see why petroleum geologists could get confused.

The AAPG Foundation Energy Resources Library was established in 1978 to help geologists find the information and materials they need. Within our books, journals and digital archives are petroleum geology articles with worldwide coverage.

The core of our collection are the AAPG publications, both digital and hardcopy. Branching from here are publications of our sections, affiliated societies and associated societies.

(See October 2006 EXPLORER, page 53; or visit our Web page at http://foundation.aapg.org/library.)

AAPG Datapages, which digitizes all of AAPG's publications and many other sources from other publishers, is in the process of digitizing the publications of many of AAPG's affiliated societies.

(Note we are still a long way from the "Star Trek" accessibility of all data.

continued on next page

The Changing Faces – and Roles – of Libraries

Examples of Geoscience Libraries

Conventional Libraries

✓ AAPG Foundation Energy Resources Library – Specialized library with a collection and services supporting the efforts of petroleum geologists; funded by the AAPG Foundation. (http://foundation.aapg.org/library)

✓ Houston Research Center Library – Formerly Unocal's Exploration and Production Library, this collection now exceeds 80,000 volumes. It is available for on-site use only. (http://www.beg.utexas.edu/mainweb/services/hrc_library.htm)

✓ Laurence S. Youngblood Energy Library – Part of the University of Oklahoma Libraries, this geology research facility supports the curriculum and research programs of OU School of Geology & Geophysics. (http://libraries.ou.edu/info/index.asp?id=19)

✓ USGS Library – Possibly the largest earth science library in the world this system of libraries, it contain publications of the U.S. Geological Survey and library serves the public and USGS geologists. (http://library.usgs.gov/)

Energy Libraries

(aka well log libraries – derived data)

✓ Midland Energy Library – Houses derived data for the Permian Basin. Data includes well logs, sample logs, mud logs, scout tickets, subscription to IHS drilling reports and completion cards – and much more. (http://www.midlandenergylibrary.com)

✓ Oklahoma Petroleum Information Center – This repository houses the OGS (Oklahoma Geological Survey) Well Data Library and the OGS Core and Sample Library. (http://www.ogs.ou.edu/opic.php)

✓ OCGS Resources Library – The OCGS (Oklahoma City Geological Society) houses logs, scout tickets, lithologic logs and production data from wells drilled in Oklahoma and surrounding states. (http://www.ocgs.org/library.asp)

✓ Austin Core Research Center – Contains cores from wells drilled throughout Texas, the United States and the world. Donations have built this facility into a major core research establishment. (http://www.beg.utexas.edu/crc/austin.htm)

continued from previous page

A popular misconception is that all information on the shelves of libraries is available at no cost via the computer. But until everything is digitized in a stable format and can be freely accessed, hard copy equivalents need to be protected and preserved.)

At times Datapages products have been referred to as a library – but to lessen the confusion it should be thought of as a collection or a digital archive. This collection has advantages over print publications in that terms or phrases occurring in titles or text can be searched.

Once found, articles can be downloaded instantly.

Active and Associate AAPG members can access at no charge the entire collection of the AAPG BULLETIN, from 1917 to present. Corporations can purchase a subscription to access all or part of the digital archives consisting of the BULLETIN, AAPG Special Publications and publications from other publishers.

Anyone with an interest, can access the entire AAPG Digital archive on a pay as you go method. To check this out visit the pay-per-view Web page at http://payperview.datapages.com.

AAPG's electronic journal, *Search and Discovery*, is available through AAPG's Web site and is an example of a digital source with no print equivalent. With no cost attached, it is a gold mine of geological information. Articles are worldwide in geographic coverage and available to anyone with Internet access.

Log on to http://www.searchand discovery.com. ❑

FOUNDATIONUPDATE

The AAPG Foundation has added a new named grant, funded through a generous contribution from AAPG Honorary Member and Trustee Associate Edward B. Picou of New Orleans.

The Edward B. Picou Jr. Named Grant will provide a $1,000 grant annually to a graduate student in the geology and geophysics department at Louisiana State University, his alma mater.

Additional information regarding the AAPG Foundation Grants-in-Aid Program is available from Rebecca Griffin at 1-918-560-2644.

In other Foundation news, two new members have become Trustee Associates. They are:

- ❒ Lance Ruffel, of Oklahoma City.
- ❒ Richard Beardsley, of South Charleston, W.Va.

Foundation (General)
Jeffrey Brooks Aldrich
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Richard S. Bishop
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Janet Sue Brister
Christopher Alan Cade
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Whiting Petroleum Corp.
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Edward A. Beaumont

Classen Family Named Grant
James S. and Jacqueline Classen
In memory of J. Don McClelland

Fred A. and Jean C. Dix Named Grant
James E. Briggs
In memory of Fred A. Dix

Robert K. Goldhammer Memorial Grant
Leonel Augusto Gomez
In memory of Robert Goldhammer

John E. Kilkenny Memorial Grant
Pacific Section, AAPG
In memory of John E. Kilkenny

Mruk Family Named Grant
Denise M. Cox

Glenn Pool Museum Fund
Lisa Hynne Schleiss

Public Service Named Fund
James A. Gibbs
In memory of Robert Sabaté

Publication Pipeline Fund
Harold Robert Beaver

E.F. Reid Scouting Endowment Fund
Brian Haws
Ronald L. Hart

Photo by Gil Mull

The scenic beauty of Alaska's Antigun Gorge (above) is among the highlights slated for the new AAPG Geo Tour trip, "Geological Tour Through Alaska: A Trans-Alaskan Transect, Gulf of Alaska to Prudhoe Bay on the Arctic Ocean," set June 2-11. Designed for geologists as well as "nature-lovers," the trip will visit three national parks, active glaciers, the Prudhoe Bay field and then end with an aerial crossing of the Brooks Range. Tour details are online at www.aapg.org/education/fieldseminars/details.cfm?ID=2.

Perth Technical Winners Announced

Technical award winners have been announced for presentations at last year's AAPG International Conference and Exhibition in Perth, Australia.

The Dengo and Beydoun winners will receive their awards at the AAPG Annual Convention in Long Beach, Calif.

The Perth award winners are:

Gabriel Dengo Memorial Award

The best paper award goes to **Dale A. Leckie**, with Nexen Inc., Calgary, Canada, for "Sequence Stratigraphic Controls of Reservoir 'Sweet Spots' in Coastal and Shelf Deposits – Cretaceous Guadalupe Formation, Colombia."

Leckie's co-authors were **Elvira Gomez** and **Miguel Jose De Armas**, both with Nexen Inc., Bogotá, Colombia.

Ziad Beydoun Award

The best poster award goes to **Jonny Wu**, Royal Holloway University of London (UK), for "4-D Analogue Modeling of Transtentional Pull-Apart Basins." ❑

Exhibits Hall Already Filled

Online Registration Open For APPEX London

Online registration is now available for APPEX London 2007, an exhibition and forum that is attracting the industry's top decision makers.

Already called by many as the premier European prospect and property expo, APPEX 2007 will be held March 20-22 at London's Royal Lancaster Hotel on the north edge of Hyde Park – a new location for the event, with easy access from Heathrow Airport via the London Underground to Lancaster Gate or Paddington Station.

The popular event offers prospect exhibits and upstream activity presentations that span the world – and this year's exhibits hall is already filled to capacity. (A waiting list has been started.)

A new addition to this year's line-up is the AAPG International Pavilion program, which offers information and exploration opportunities from a multitude of national oil companies, highlighting such global targets as China, Nigeria, Colombia, Indonesia, the Middle East and Asia.

Also new this year will be a short course on "Assessing Risk in Exploration Prospects," offered by Peter R. Rose.

Other confirmed forum presentations include:

✓ ABN-AMRO-sponsored Finance Forum (five talks detailing financing of upstream exploration).

✓ European Basin Ranking Review (Tom Ahlbrandt).

✓ Pannonian Basin Potential (Hungary).

✓ Norway – The Growing Opportunity (Andrew Armour, Revus Energy).

✓ International Deal Flow (Joe Staffurth, JSI Services).

✓ Colombia – An Update and the Opportunities (M. Weibe, Solana).

✓ Present and Future Opportunity in Russia (John Dolson, TNK-BP).

✓ Future of Offshore Gas-Australia (Ian Longley, Woodside).

✓ Pakistan – Past, Present and Future (Bernhard Krainer, OMV Exploration).

✓ Sub Saharan Africa, Bruno (Pierre Soulhol, Total).

✓ Deepwater Africa for the Independents (Alan Stein, OPHIR Energy).

✓ East Africa: Opportunity in Tanzania and Madagascar (M. Rego, Aminex).

For more information, to register online (and avoid the crowds) or to reserve a spot on the exhibition waiting list, go online to http://appex.aapg.org; or contact Peggy Pryor, AAPG meetings manager, at 001-918 584-2555; ppryor@aapg.org. ❑

REGIONS AND SECTIONS

AAPG, European Region Join Hands for Athens

(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.

News items, press releases and other information should be submitted to the EXPLORER/Regions and Sections, P.O. Box 979, Tulsa, Okla. 74101.

Contact: Carol McGowen, AAPG's Regions and Sections manager, at 1-918-560-9403; or e-mail to cmcgowen@aapg.org.

This month's column, a look at this year's European Region Energy Conference and Exhibition in Athens, Greece, was written by Geir Lunde, general chairman; Gerry P. Lourantos, general vice chairman and social program chairman; and Rudy Swennen, student activities chairman.)

By GEIR LUNDE
GERRY P. LOURANTOS
and RUDY SWENNEN

On behalf of the Athens 2007 Organizing Committee we want to personally invite all AAPG members to join us for the unique occasion of this year's European Region Energy Conference and Exhibition – the first joint venture between AAPG and the AAPG European Region.

The conference, built on the theme "Challenge Our Myths," will be held Nov. 17-20 in Athens, Greece, and it promises to be an inviting combination of excellent technical sessions from the Circum-Mediterranean – and well beyond – and uniquely Greek social activities.

Thanks to our sponsors – including Chevron, ExxonMobil, Shell, TGS-NOPEC, PGS, Hellenic Petroleum, SAGEX and Concedo, all of which have given valuable, early support – a fantastic exhibition is planned in the beautiful, white marble Megaron International Conference Centre in the heart of Athens.

Photo by Rusty Johnson

The Acropolis hill, the most important cultural site in Greece's famed city of Athens. This year's European Region Energy Conference and Exhibition – the first joint venture between AAPG and the AAPG European Region – will be held Nov. 17-20 in Athens, built on the theme "Challenge Our Myths."

Challenging Our Myths

Our theme "Challenge Our Myths" sets the stage for the technical program, and the session chairs and technical program committee, headed by Bjørn Wandås and Vlasta Dvorakova, are assembling a strong international program.

The theme not only reminds conference goers to question assumptions, it is an invitation to speakers and poster presenters to take risks and present challenging ideas.

For example, a session on "Untraditional Theories and Ideas in Global and Large Scale Geology" will examine the basis for the concept of subduction zones: What would be the consequences for exploration and production if this concept were just an established truth, just something we have taken for granted since we were taught at university? Could this concept be a myth?

This also is the right conference to attend for everyone seeking an update on recent exploration and production outcomes within key petroleum regions in the Mediterranean, North Africa, Middle East, Caspian, Black Sea, Russia, North Sea, Norwegian Sea and the Barents Sea.

What about an update on carbonate and clastic reservoirs, structural geology, heavy oil, unconventional resources, resource estimation and the energy supply and demand picture?

Could we even manage to get geologists to mingle with professionals who specialize in CO_2 management? Would something valuable come out of that?

Maybe we will move from political statements to practical solutions – from myth to new understanding.

Spotlight on Students

Many cornerstones of our society can be traced back to Greek culture, and with this meeting new milestones will undoubtedly be added in the field of geoscience.

For that reason alone, Athens is the place to be for students and young professionals, as this meeting will bring together people from industry and

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academia, old and young.

With direction from Student Activities Chair Rudy Swennen, the conference will allow students to acquire the latest inspiring information on future trends in geoscience and give a forum to young researchers to present their findings to a broad audience.

Apart from a students reception, there will be several events conducive to establishing contacts with many experienced geoscience-industry professionals.

And certainly, attending this conference is a must if you are looking for challenging job opportunities; the industry is now recruiting and eager to sponsor students with fresh, new perspectives.

The Spirit of Zorba

Technical sessions are just a part of a meeting's lure; Greece's multi-dimensional history and culture, equally matched by multi-faceted social traditions and lifestyles, make it a place to enjoy.

Greeks love to eat, drink, dance and, in general, be merry as often and as intensely as they possibly can! It is no coincidence that in the famous book "Alexis Zorbas," written by Nikos Kazantzakis (and then the Hollywood film "Zorba the Greek"), when Zorba meets the English gentleman on a lovely sandy beach and tries to express his intense happiness, he says, "Sir, I may not be able to fully express my feelings in words, but I can certainly dance them for you!"

The Athens social program will include many diverse activities, all designed to expose modern Greece to our valued visitors and to invite all our friends to "become Greek" – and even "Zorba" – if only for a few days!

Join us in Athens and "feel" a different Greece from the one that casual tourists normally see. You can enjoy the classical sites and famous museums even as you sample the modern galleries and new high-tech settings.

Visit relaxing islands and interesting vineyards, sample local foods and taste exciting new wines. Walk through picturesque lanes around the Acropolis and enjoy shopping, playing golf and relaxing at a spa – and then dance away your cares well into the late moonlit nights.

To help you, the Social Program Committee has organized several activities, including:

✓ Visits to classical and historical locations in and around Athens – including the Acropolis and Agora – as well as sites away from Athens including Cape Sounion and Delphi.

✓ Visits to archaeological and Byzantium museums, as well as art galleries such as the National Gallery and Vorres Gallery.

✓ Visits to high-tech locations at the Hellenic Centre, planetarium and Olympic Complex Centre.

✓ Day trips and excursions to nearby islands of Aigina and Spetses.

✓ Trips to vineyards and wineries in Attica.

✓ Food and wine tasting sessions.

✓ Street walks and exciting shopping sessions.

✓ A golf tournament and unique spa sessions.

✓ Dancing sessions.

So start making plans now to join us for the European Region Energy Conference and Exhibition, presented by AAPG and the AAPG European Region.

For more information go to the AAPG Web site at www.aapg.org/athens. ❑

This Myth Has Real Meaning

Every theme has a story, and the Athens conference theme "Challenge Our Myths" is no exception.

It dates to February 2006, when Gerry Lourantos, Geir Lunde and meeting contractor Bruce Lemmon were walking down the streets of Athens near the Acropolis, shining bright in the morning sun.

And in the windows of the travel agencies they saw a slogan in Greek letters that read, "Live Your Myth."

They thought, what about a symbol for the conference with some relation to myths? Myths, after all, may inspire us and may also contain some very valuable truths.

Walking a few blocks further down the street, the answer became clear: Prometheus, the Titan who taught humans all the secret sciences of the gods, could be the conference symbol.

The connection was clear: It was Prometheus who stole from Zeus the most valuable element – fire – and gave it to the humans.

The mythological Prometheus risked a lot for mankind. As geoscientists, should we too be ready to take some risks? Is it not individuals who take risks that advance all of mankind?

Before reaching the Acropolis, the slogan for the conference comes into focus. As geoscientists, we should not settle for just *living* our myths, but always be ready to challenge the established truths – we must *challenge* our myths. ❑

PROFESSIONAL NEWS BRIEFS

Bobby H. Bammel, to geologic geosteering consultant, BHL Consulting, Tyler, Texas. Previously senior petroleum geological consultant-geosteering, Saudi Geophysical, Al Khobar, Saudi Arabia.

Tom Berkman, to senior staff geologist, Anadarko Petroleum, Denver. Previously senior geological specialist, Kerr-McGee, Houston.

Daniel S. Bryant, to geological, drilling and completion consultant, Daniel S. Bryant Consulting, Richmond, Ky. Previously senior geologist, Daugherty Petroleum, Lexington, Ky.

Paul Crevello, to director and chief operating officer, BPC Limited, Boulder, Colo. Previously president, Petrex Asia, Kuala Lumpur, Malaysia.

Marc Croes, to senior staff geophysicist, El Paso E&P, Houston. Previously geophysicist, Transworld E&P, Houston.

Terry Davidson, to senior geologist, Tristone Capital, Houston. Previously senior geologist, El Paso Production, Houston.

Dennis Giovannetti, to senior geologist, SPN Resources, Houston. Previously geologist, Newfield Exploration, Houston.

Tom Gundersen, to president, Petroleum Synergy Group, Reno, Nev. Previously vice president/general manager, Petroleum Synergy Group, Reno, Nev.

Robert Handford, to president and consulting geologist, Strata-Search, Bryson City, N.C. Previously president, Strata-Search, Austin, Texas.

Bruce Handley, to program director, Handley Consultants, Houston. Previously senior project manager, The Benham Companies, Houston.

Roseleen Kelly, to senior geoscientist, Dansk Shell, Denmark. Previously senior seismic interpreter, Shell UK, Aberdeen, Scotland.

Jack Kerfoot, to vice president exploration-Gulf of Mexico, Murphy E&P, Houston. Previously general manager-exploration Malaysia, Kuala Lumpur, Malaysia.

Tom Lenney, to geological adviser, HESS, Houston. Previously senior geologist, EnerVest, Houston.

Tim Lindsey has been appointed to the board of directors, Daybreak Oil and Gas, Spokane, Wash. Lindsey is a principal with Lindsey Energy and Natural Resources, Houston.

Mitch Meyer, vice president-exploration, Fidelity E&P, Denver. Previously exploration director, Fidelity E&P, Denver.

David A. Miller, to senior staff geophysicist-international new ventures, El Paso E&P, Houston. Previously senior geoscientist, Transworld E&P, Houston.

Scott Edward Moravec, to president, Eagle Information Mapping, Houston. Previously vice president of operations, Eagle Information Mapping, Houston.

Robert W. Richardson, to senior landman, Rosetta Resources Operating, Denver. Previously land manager, Infinity Oil and Gas of Wyoming, Denver.

Bob Stancil, senior vice president-exploration, Ignis Petroleum Group, Dallas. Previously vice president-exploration, Anadarko Petroleum, The Woodlands, Texas.

(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.)

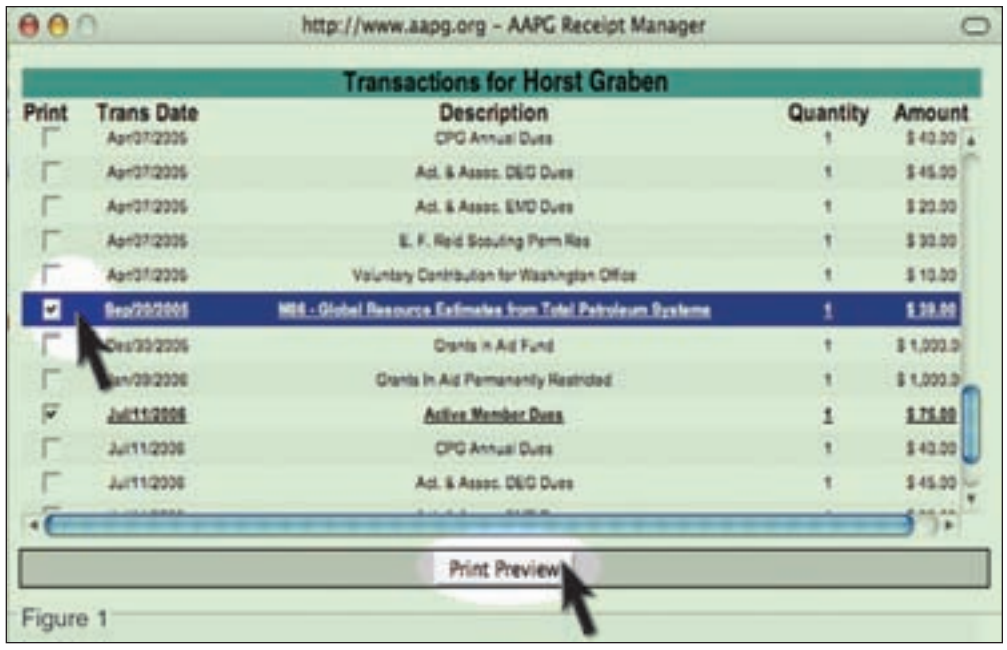

Figure 1

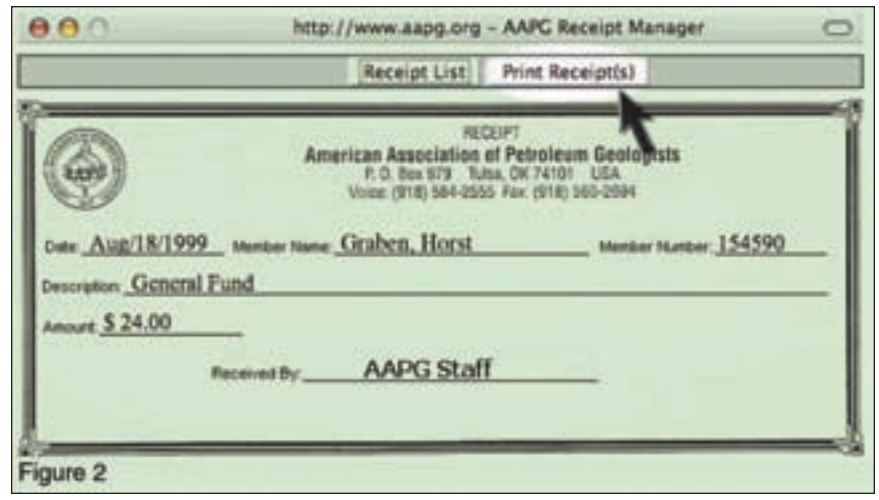

Figure 2

Need a receipt? AAPG has added a new online service to help with that documentation: Members or customers may select up to three items at a time from a list of their transactions with AAPG (figure 1); those items are then displayed in a receipt format (figure 2) for a printable record.

WWW.UPDATE

Needing A Receipt? Go Online

By JANET BRISTER
Web Site Editor

One of the greatest benefits that AAPG offers to our members lies behind your individual login through "Members Only."

Displayed prominently on the page is the recently updated "Geographic Search," a map-based interface on the BULLETIN archive database – it's another way of helping you find the information you need from the massive data provided through the AAPG BULLETIN.

And recently added to the list of shortcuts under your welcome line is "Print Receipts."

The AAPG Accounting Department is often asked to provide receipts for purchases made and gifts given over the past year.

Well, now you don't have to hunt down the AAPG phone number; you don't have to wait for someone to answer the phone; you don't have to find time while you are at work to make your request.

You may simply logon to your AAPG page and use this handy feature.

When you click "Print Receipts" it opens a new window (figure 1) that displays your purchase activities with AAPG. Simply mark a box on the left to select the item for which you need your receipt.

(You are limited to three items at any one time.)

Next, locate the print preview button at the bottom of the window. When this is clicked it will open a separate page (figure 2) displaying your receipts. If these are what you are looking for, you may print these receipts and that button will return you to the receipt manager window for further selections.

Should you need additional receipts, simply deselect your initial selection(s) and check new ones.

Wasn't that easy?

Stop By Our Booth

And now, a reminder for those who will be attending the upcoming AAPG Annual Convention in Long Beach, Calif. – the AAPG Center in the Exhibit Hall includes the EXPLORER/www.aapg.org booth, where questions about the Web site's features can be answered.

See you there.

Good browsing! ❑

MEMBERSHIP AND 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, but places the names before the membership at large. Any information bearing on the qualifications of these candidates should be sent promptly to the Executive Committee, P.O. Box 979, Tulsa, Okla. 74101. (Names of sponsors are placed in parentheses. Reinstatements indicated do not require sponsors.)

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

For Active Membership

California
Hogan, Phillip J., Fugro West, Ventura (D.M. Sackett, K.H. Peace, M.D. Wracher); **Thomas, Clark L.**, retired-Chevron, Palo Alto (reinstate) (L. Funkhouser, W.E. Crain, A. Martini)

Colorado
Heerschap, Lauren Kim, Oso Energy Resources, Durango (B.C. Boyce, K.H. Smith, V. Matthews III)

Kansas
Knapp, Steven M., National Fuel, Topeka (D. Thompson, E. Kaszubski, M. Cochran)

Mississippi
Schmitz, Darrel W., Mississippi State University, Mississippi State (R.L. Ericksen, B.L. Kirkland, J. Harris)

Oklahoma
Hansen, Carl Douglas, Unit Petroleum, Tulsa (T.H. Adkins, L.D. Gerken, R.L Perkins)

Texas
An, Linji Y., AERA Energy, Irving (R.K. Davies, W. Schuman Wu, B. Carnahan); **Blaylock, Phebe M.**, EOG Resources, Houston (M.W. Boyd, A.R. Close, J.J. Blaylock); **Johnson, Joni Gayle**, consultant, Missouri City (reinstate); **Langford, Richard**, University of Texas-El Paso, El Paso (W.C. Cornell, G.R. Keller Jr., K.C. Miller); **Shahzad, Muhammad Shafqat**, LMKR, Houston (K.M. Javaid, M. Najeeb-uz-Zaman, A. Iqbal, Afzal); **Via, Rachael K.**, ExxonMobil, Houston (M.R. Weaver, J.R. Markello, J.K. Matoush); **Wardle, Sara Michelle**, Range Resources, Fort Worth (M. Candelaria, M. Emery, R.D. Heckelsberg); **Young, Stephen Robert**, TXCO, San Antonio (L.T. Billingsley, R.J. Scott, L.G. Nyland)

Australia
Palmer, Saxon Matthew, BHP Billiton, Perth (G.B. McMurtrie, P.G. Carroll, R.A. Hill)

Canada
Abbas, Ghulam, Saudi Aramco, Calgary (A. Garg, A.Q. Hameda, M.Y. Al-Shobaili); **Skinner, James Clayton**, Bear Ridge Resources, Calgary (C.E. Jaycock, D.C. Hibbs, R.K. Sullivan); **Wang, Xiang**, Trident Exploration, Calgary (S.W. Burnie, D.W. Hume, K. Rakhit)

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Certification

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

Petroleum Geologist

Texas
McCall, Ernest Porter, consultant, Boerne (reinstatement); **Wind, Gerrit**, consultant, Houston (D.M. Stone, M.M. Cassidy, G.R. Bole)

DL Speakers on Tour in March

Four AAPG Distinguished Lecturers – three domestic and one international – will be on speaking tours in March.

Information on the speakers, their topics and their schedule can be found online at www.aapg.org.

Touring in March are:

❒ **Steve Bachtel**, carbonate research specialist with ConocoPhillips, Texas, will be speaking to groups in the western United States through March 9, with stops in Colorado, Idaho, Alaska, Montana and New Mexico.

His topic is "Seismic Stratigraphy of the Miocene-Pliocene Segitiga Platform, East Natuna Sea Indonesia: The Origin, Growth, and Demise of an Isolated Carbonate Platform."

❒ **Jacob B. Lowenstern**, with the U.S. Geological Survey in Menlo Park, Calif., and the scientist-in-charge of the Yellowstone Volcano Observatory, will be speaking to groups in western North America from March 12-23, with stops in Oklahoma City, Tulsa, Montana, Saskatchewan, Washington and California.

His topic is "Intrusion, Deformation and Degassing at the Yellowstone Caldera."

❒ **Jean-Laurent Mallet**, professor at the Ecole Nationale Supérieure de Géologie, Nancy France, and this year's Allen P. Bennison Distinguished Lecturer, will be speaking to groups in North America from March 5-16. His stops will be in Newfoundland, Canada, Colorado, Oklahoma, Missouri, Houston, Wyoming, Montana and northern California.

His topic is "Integrated Earth Modeling: From Seismic Interpretation to Flow Simulation in Reservoirs."

❒ **James R. Markello**, supervisor and adviser for ExxonMobil Upstream Research, Houston, will be on a tour of the Middle East through March 13, speaking to groups in Dhahran, Saudi Arabia; Al Ain and Abu Dhabi, UAE; Cairo, Egypt; and Ankara, Turkey.

His topic is "The Carbonate Analogs Through Time (CATT) Hypothesis – A Systematic and Predictive Look at Phanerozoic Carbonate Reservoirs."

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Colombia
Jimmy, Ardila, Saudi Aramco, Bogotá (J. Melvin, J.J. Faulhaber, S.A. Hassani)

India
Varghese, Jose, Shell Technology India, Bangalore (B. Ratha, N. Vashist, S.M. Chowdhury)

Indonesia
Chakraborty, Subrata Kumar, Schlumberger, Jakarta (reinstate)

Saudi Arabia
Arouri, Khaled R., Saudi Aramco, Dhahran (J. Al-Dubaisi, P.D. Jenden, H.I. Halpern)

Scotland
Scott, David Thompson, HRH Geological Services, Aberdeen (J.F. Brown, D. Harrison, A.J. Grindrod)

South Africa
Roux, Jacques, Petroleum Agency SA, Parow (D. Broad, J. Malan, J. Aldrich) ❒

READERS' FORUM

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.

Graduated Dues

Regarding the proposed plans to restructure AAPG dues: As readers of this forum and the EXPLORER may know, I opposed the Pete Rose proposal because it was geographic-based. The new proposal by Larry Jones' special committee makes the graduated dues structure across the board for ALL AAPG members, so I support it.

If you think about it, we have always had a graduated dues structure. Recall that students pay a lower rate. This just changes the graduated scale that already exists.

I served for six years on AAPG's Membership Committee and recall sitting around watching people wringing their hands and contemplating their navel trying to come up with ways to increase membership. Nothing seemed to work. Perhaps the graduated dues structure will make a difference.

Finally, let me ask this question: If a graduated dues structure had been in place in the mid 1980s when we had the oil bust, would AAPG's membership retention rate have been better? I suspect it might. Certainly members of the House of Delegates would not be reviewing so many reinstatement applications, some of which had a gap in membership over 15 years!

AAPG members work in a cyclic industry. Right now, things look great for everyone I know. It may not always be that way. So if another bust comes (and I hope it is later than sooner if it has to happen as a reality check), perhaps membership retention will be better if a graduated structure is in place.

George Devries Klein
Sugar Land, Texas

I continue to have major objections to the proposed graduated dues structure. It contains significant financial risks, and should be rejected by the House of Delegates.

AAPG should not subsidize new memberships to anyone other than students who are just starting their careers. If some leaders want to help pay for the memberships of new non-student recruits or members, they should set up a separate, outside charity and AAPG will be happy to work with them to identify needy members for that group's support.

To institutionalize this welfare system into AAPG's cost/revenue structure, with full voting rights to the subsidized members, is grossly unfair to all full-paying voting members, whose voices will be diluted (yet paying even more via dues increases). More dues increases on those that have the "ability to pay" seem inevitable under this structure.

Discount members will NOT boost net income in future years, and just the opposite will be true, as they ask that more funds and services be dedicated to them as their numbers grow, especially overseas.

Here are my most significant objections:

✓ Cheapens membership: By making it significantly cheaper for many recruits and members, and basing it socialistically on their income, we demean and cheapen membership in AAPG to all the rest of us.

✓ Dilutes voting rights: It is offensive to many voting members to grant voting rights to discount dues members, who have not otherwise earned those rights through the discounted honorary or emeritus status.

✓ Fails to verify income: We live in a world that does not share common values and definitions of honesty and integrity. To propose this without a document-required, income verification system, is reckless.

✓ Endangers essential dues revenue: AAPG dues are the most essential revenue in our budget at about $1.8 million, and they pay for all of the basic, non-program designated HQ operations.

✓ Will cause member conversions: The loss in existing dues revenue from this structure as a result of the incentives to convert to a discount level could exceed the revenue gain from adding discount members.

✓ Future EC subsidies: Instead of the HoD, it empowers all future ECs alone, with the power to giving the paper copies of the BULLETIN and EXPLORER back to all discount dues members.

✓ Missing cap and sunset provision: The ability to amend this structure declines with discount member growth, because every 70 discounted members gets a delegate in the HoD. At best, a maximum cap of 500 discount members should have been proposed, with a sunset-dissolution provision for the entire structure in three years, so it would have to be reconstituted by the HoD at that time.

Most of the advocacy for this new dues structure comes from political motivations to increase international membership at almost any cost, regardless of the potential negative long-term financial and existing member loyalty impacts on the organization. Those discounted dues members will still expect AAPG to spend budgetary funds on them, without paying for much of any of it.

Leadership needs to find other ways to encourage membership instead of proposing we give away 50 and 75 percent discounts on dues and mortgaging our future to a potentially

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large number of virtually non-paying members.

Dwight "Clint" Moore
Houston

(Editor's note: Moore was AAPG treasurer for 2004-06.)

Drill the Well

The proposed "graduated dues" structure does contain future financial uncertainty. But AAPG members are very familiar with the analogy used by AAPG Secretary Mike Party, who likens it to the uncertainty of drilling a well. However, in this case it is more like drilling a development well. We cannot predict the exact outcome, but we feel good about it.

Here is the "back of the envelope" risk analysis: Dues only account for 13 percent of AAPG's revenue, and we estimate less than 10 percent of current members are even eligible for reduced dues. If you assume all 10 percent took the reduction, that could decrease overall revenue by about 1 percent. Even that would be partly offset by decreased costs for hardcopy BULLETIN and/or EXPLORER.

That is the downside. When we propose a well we also estimate the upside. In this case the upside is increasing membership and their involvement in AAPG goods and services.

SPE's experience provides a good analogy.

AAPG is not the first society to try this graduated dues system. SPE has used a similar structure to lead it to tremendous growth. Dues revenue declined slightly the first year or two, but increased in subsequent years.

More importantly, overall society revenue grew, as the increased membership bought more books, attended more conferences, etc. While SPE's model is mainly based on geographic location, AAPG's proposed model is not geographically based. It is based on the individual member's ability to pay.

It is not a "give away" plan, but rather a "you get what you pay for" option.

As far as future costs are concerned, the major goods and services we offer our membership are continuing education, conventions and publications. All of these are PURCHASED. We hope these new members DO demand such increased goods and services.

Concerning voting rights, any new member is not automatically an Active (voting) member. They must qualify for Active membership with sponsors and experience. We cannot base our right to vote on whether you pay full or reduced dues. We changed those kinds of laws in the United States several decades ago.

Let's try this new structure. We have been talking about it for several years. It is time to drill the well.

Lee T. Billingsley
AAPG President

Agonizing

All Lee Gerhard's commentary "Climate Statement as a Result of Study" (January EXPLORER) seems to say is those in the AAPG responsible for creating the AAPG climate policy statement worked harder than other professional societies.

He totally missed the point of those AAPG members who made their positions abundantly clear through the recent AAPG climate change discussion Web site that the policy was clearly wrong, not that the AAPG Executives didn't work hard enough.

The information in Gerhard's Internet PowerPoint presentation was carefully examined by many who participated in the AAPG survey and who then pointed out fundamental flaws and mistakes inherent in that work. These comments were clearly communicated back to the AAPG in unmistakable terms.

What is Gerhard talking about when he asks for members to become interested in his information in support of this flawed climate change policy? What was the AAPG survey all about if not to honestly report feedback to members?

It would serve Gerhard and the current Executive Committee well to recall the earlier, monumental scientific blunder that the AAPG committed more than 75 years ago in its rejection of Alfred Wegener and his pioneering theories of continental drift and plate tectonics. This rejection, although with some scientific rationale, was based primarily on ideology and not on science. I can well recall this happening as a geology student at the University of Illinois almost 60 years ago.

It took AAPG decades to adopt the Wegenerian-based "new geology" in later exploration successes in major discoveries of petroleum and natural gas in basins all over the world.

Does history repeat itself? You bet it did, when AAPG adopted the same non-science based arguments in "trashing" the responsible science of climatology and misinterpreting paleoclimatology, which is certainly an important part of geology.

Many current AAPG members of long standing – like myself, an Emeritus member who has been active since 1955 – are agonizing over whether to resign over the AAPG's mishandling of climate change and global warming issues.

(I'm staying put for the time being in the hope that AAPG will soon come to its senses and try to regain some semblance of credibility in the geology community, let alone in the community of all scientists.)

Will Gerhard be satisfied when the only AAPG members left are adherents to his brand of global warming denial? If you haven't noticed, the world isn't just laughing at us anymore. It's even worse; the AAPG is being ignored.

There's still time if actions are soon taken to reverse the current ill-conceived AAPG climate change policy. Even the biggest supporters of global warming denial, like ExxonMobil, have backed off their extensive counterproductive efforts to destroy legitimate science telling us that humans are directly responsible for most of global climate change and warming. The consequences are becoming increasingly severe, if not catastrophic.

When will AAPG ever learn?

J.R. "Jack" Century
Calgary, Canada
❑

UNIVERSITY OF WYOMING

DISTINGUISHED PROFESSORSHIP IN GEOPHYSICS

The Department of Geology and Geophysics at the University of Wyoming invites applications for a Distinguished Professor of Geophysics. This is an Endowed Chair position in the Department and in the newly created School of Energy Resources (SER) at the University of Wyoming, an institute dedicated to energy-related teaching and research in support of state, national, and international energy-related activities. This appointment may be made at any rank, including Associate and Full Professor. The position can begin as soon as July 1, 2007.

We seek an internationally recognized individual who has the potential to develop an externally funded research program in reservoir imaging using 3-D seismic technology and/or reservoir characterization using petrophysical techniques. The successful candidate will be involved in the undergraduate and graduate teaching mission of the Department of Geology and Geophysics, and will complement and expand on departmental strengths not only in geophysics, but also in areas including structural geology/tectonics, sedimentary geology, and environmental geology. We seek a person with the ability to cooperate productively with other SER professors in geology and geophysics, mathematics, chemical and petroleum engineering, economics, and other energy-related fields. The SER is an ambitious, new state-funded institute that requires innovative, forefront researchers with the ability to produce benefits tangible to SER stakeholders and supporters. Information about the School of Energy Resources is available at uwyo.edu/SER. Additional information on the Department Geology and Geophysics can be obtained at home.gg.uwyo.edu

Applications should include a statement of research and teaching interests and accomplishments, curriculum vitae, and the names and contact information for three individuals who can provide letters of evaluation. **Preference will be given to candidates applying before March 1st 2007** and review of completed applications will begin immediately upon receipt; however, applications will be accepted until the position is filled. Send an electronic copy of your application to: Ms. Carol Pribyl at cpribyl@uwyo.edu; if you have additional application materials to send, please direct them to the Geophysics Search Committee, Department of Geology and Geophysics, University of Wyoming, 1000 East University Avenue, Dept. 3006, Laramie, WY 82071-2000.

The University of Wyoming is an equal opportunity/affirmative action employer.

University of Leoben, Austria

Full professor (tenure track) Petroleum Geology

The Department of Applied Geosciences and Geophysics at the University of Leoben seeks applicants for the position of full professor of Petroleum Geology.

The candidate is a personality of international standing who covers this field in research and teaching and has gained experience managing teams in the oil industry or in industry related research projects.

Requirements for the position are a university degree and a doctoral degree in a relevant field; the habilitation or equivalent scientific qualification is a prerequisite; teaching experience and didactic qualification are necessary. Lectures are to be held in German and English.

The University of Leoben has a strong commitment to increase the number of female academic staff and encourages applications from women.

Applications, including relevant documents and copies of up to five most characteristic publications, should be sent fivefold before March 30, 2007 to The Rector, University of Leoben, Franz-Josef-Straße 18, A-8700 Leoben, Austria.

Additional information can be obtained from the chairman of the search committee, Prof. Karl Millahn (Tel.: +43 3842 402 2600, Email: Karl.Millahn@mu-leoben.ac.at)

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POSITION AVAILABLE

UNIVERSITY OF NEW ORLEANS
DEPARTMENT OF EARTH AND ENVIRONMENTAL SCIENCES

TENURE-TRACK FACULTY POSITION

PETROLEUM GEOLOGIST

The Department of Earth and Environmental Sciences (EES) at the University of New Orleans invites applicants to fill a tenure-track position as an Assistant Professor in the field of Petroleum Geology anticipating starting in the 2007 calendar year. Commensurate with this position, the successful candidate could also be awarded the Braunstein Professorship in Petroleum Geology reflecting the successful candidate's distinguished career in the petroleum geosciences. The mission of EES is to build a center of excellence in earth and environmental sciences in the heartland of America's energy coast, Louisiana's Mississippi River delta.

UNO is seeking an experienced petroleum geologist with broad experience in the Gulf of Mexico Basin. Previous experience within the oil and gas industry is highly desirable. Other desirable talents and expertise we seek in a candidate include:

- Structural geology-tectonics,
- Sedimentary basin analysis,
- Subsurface exploration, and
- Reservoir characterization-evaluation.

This position is well-supported with start-up funds commensurate with the successful candidate's experience, publication record and funding record. Research facilities will be available for the successful candidate in the UNO Geology Building and/or UNO Research and Technology Park. EES is well-endowed with field and laboratory resources. We seek an individual committed to research, teaching and graduate training. A PhD is required.

Interested applicants should submit a curriculum vita, a statement of research and teaching interest, selected publications and three letters of reference by March 30, 2007 to:

Dr. Shea Penland, Chair
Department of Earth and Environmental Sciences
University of New Orleans
2000 Lakeshore Drive
New Orleans, LA 70148
504.280.6325
spenland@uno.edu

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Visiting Assistant Professor of Geology
Centenary College of Louisiana

Centenary College of Louisiana invites applications for a two-year position at the assistant professor or instructor level in the Department of Geology, beginning August 2007. We are seeking candidates who are interested in teaching geology in a liberal arts environment and involving undergraduate students in research experiences. Recent Ph.D.'s and ABD's are encouraged to apply. The teaching responsibilities will depend on the background of the successful candidate but should involve some subset of Physical Geology, Environmental Geology, Historical Geology, and Sedimentary Geology; a special topics course in the successful candidate's field of interest is also a possibility. Centenary College (**www.centenary.edu**) is a selective liberal arts institution with a student/faculty ratio of 12 to 1 and is a member of the Associated Colleges of the South (www.acs.org). The college has a $100 million endowment and is located in a metropolitan area with a population of more than 350,000. To apply, send a letter of application, statement of teaching philosophy, vita, copies of transcripts, and three letters of recommendation to:
Dr. Scott Vetter, Chair, Department of Geology and Geography, Centenary College of Louisiana, P. O. Box 41188, Shreveport, LA 71134-1188. Review of applications will begin March 1. Centenary College of Louisiana recognizes that diversity is essential to its goal of providing an educational environment where students explore the unfamiliar, invent new approaches to understanding, and connect their work and lives to the world at large. We thus welcome applicants who would add to the college's diversity of ideas, beliefs, experiences, and cultural backgrounds. EOE

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BILLY AND ANN HARRISON ENDOWED CHAIR
Department of Geology and Geophysics

The Department of Geology and Geophysics at LSU invites nominations and applications for the Billy and Ann Harrison Endowed Chair in Geology and Geophysics. We seek an outstanding individual with an internationally recognized scientific reputation who will develop a strong, externally-funded research program in the field of sedimentology and who will complement existing faculty expertise. The successful candidate will be expected to publish in highly ranked journals, teach undergraduate and graduate courses in his or her area of specialization, and develop strong M.S. and Ph.D. programs. **Required Qualifications:** Ph.D. in geological sciences or another relevant discipline; a strong record of published research in topics of relevance to sedimentology; demonstrated ability to attract funding. This appointment would normally be made at the rank of Full Professor. However, exceptional candidates at the Associate Professor level will be considered.

The Department of Geology and Geophysics consists of 18 tenured and tenure-track faculty members having a wide range of expertise and offers B.S., M.S., and Ph.D. degrees in geology. The department has excellent analytical and computational facilities, a strong record in research and graduate training, an ongoing industry-funded M.S. program in Applied Depositional Geosystems, and a strong alumni base. The successful candidate will become part of a broader geosciences community within LSU, which includes faculty within the Department of Petroleum Engineering, the Department of Oceanography and Coastal Sciences, the Louisiana Geological Survey, and the Department of Geography and Anthropology. For more information, see our website: http://www.geol.lsu.edu.

The review process will begin March 15, 2007 and continue until a candidate is selected. Nominations or inquiries should be directed to Professor Jeff Hanor, Harrison Search Committee Chair, at 225-578-3418 or hanor@lsu.edu. An offer of employment is contingent on a satisfactory pre-employment background check. Applicants should send a copy of their curriculum vitae (including e-mail address), a statement of their research and teaching interests, and the names, addresses, phone numbers, and e-mail addresses of at least three references to: Harrison Chair Search Committee, Department of Geology and Geophysics, Louisiana State University, Ref: #006147, Baton Rouge, LA 70803.

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AAPG Bulletins 1923 to present. Approximately one half are hard bound (brown with gold letters) including Index to 1965. (303) 433-4111

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DIRECTOR'S CORNER

Race to the Long Beach Convention

By RICK FRITZ

It's that time of year again – time for the annual convention, AAPG's main event for the year!

Anticipation, Achievement, Appearance, Aspiration and Amusement are the five "A"s for convention time. On achievement Thomas Edison said that there are three great essentials to achieve anything worthwhile – "hard work, stick-to-itiveness and common sense." Many members and staff have been "working hard' to make this one of the best conventions and exhibitions ever.

"Understanding Earth Systems – Pursuing the Checkered Flag" is the theme for the conference – referring, of course, to the Long Beach Grand Prix that will take place immediately after the annual meeting.

Long Beach has a lot to offer. It has a reputation as one of the most international cities in America. The Organizing Committee, led by Dalton Lockman as general chair, has had the "stick-to-iveness and common sense" to develop a very comprehensive global event.

* * *

As always, the key part of the convention is the technical program. Both oral and poster sessions in Long Beach are based on the following topics:

✓ Deep Water Reservoirs.
✓ Stratigraphy and Sedimentology.
✓ Structural Innovations and Applications.
✓ Global Exploration Portfolio.
✓ Maximizing our Potential; Reservoir Characterization and Modeling.
✓ Geoscience Tools.
✓ Unconventional Reservoirs and Resources.
✓ Hydrocarbon Systems and Basin Analysis.
✓ The New Oil Business.
✓ Astrogeology and the "Bigger" Picture.
✓ Geoscience and Public Policy.

As you can see there is something for everyone with one of our most diverse programs ever developed for an annual meeting.

All three AAPG Divisions have provided input into the program and, in addition, they are sponsoring lunches with excellent speakers. And AAPG award-winning journalist and author Michael Economides will be the speaker for the All-Convention Luncheon (see page 24).

We also have a complete slate of short course offerings and, of course, many excellent field trips in sunny California.

On the final day of the meeting, we have borrowed a tradition from our Australian "mates" – AAPG will hold its first "Sundowner" at an annual meeting. This will be an end of convention reception on the final evening open to all attendees.

* * *

Annual meetings are when almost all of AAPG's standing committees meet, and many key decisions will be made in Long Beach for the Association. The decisions they make and the programs they initiate will influence the ultimate direction of the Association. Please consider joining a committee of your interest.

Also, in Long Beach the House of Delegates will be considering the issue of a "graduated dues structure." The proposal is for a system of dues that is fair for all members and based on a member's or potential member's ability to pay (see page 26).

* * *

Long Beach is turning out to be an extremely popular meeting. Hotels have filled-up fast, but we can still find you a place to stay. Recently, we contracted with the Queen Mary for premium hotel space. Most of the hotels are within walking distance of the Long Beach convention center. Please fax your hotel request form to: +1 330 963 0319.

Networking, continuous technical sessions, training, technology and an Icebreaker thrown in for good measure. For the price, AAPG's Annual Convention is one of the best values for professional development. Long Beach promises to be no exception from that rule. California meetings are always unique and fun.

Long Beach will be a great meeting. Don't miss out.

Rick

APPEX London Exhibits Sold Out!

APPEX London, which will be held March 20-22, has a new, improved look this year – for starters, it has moved to the Lancaster Hotel across form Hyde Park.

Thanks to a very hard working organizing committee it also has a new, incredible three-day program (see page 55). As a result, we have sold every inch of exhibit space – and are looking for more.

Make plans to come to for this singular exploration/exploitation event with global applications. I hope to see you there. ❑

Five Technical Sessions, Luncheon

DEG Getting Ready for Long Beach

By JANE McCOLLOCH
DEG President

This year's DEG program at the AAPG Annual Convention in Long Beach, Calif., includes five technical sessions and the DEG luncheon and awards ceremony.

The technical sessions are:

✓ The Dynamic Earth: Earthquake Risks and Geohazards (oral session).
✓ The Dynamic Earth: Earthquake Risks and Geohazards (poster session).
✓ Tsunamis and Hurricanes: The Geologic Record and the Pending Threat (poster).
✓ CO_2 Budgets and Greenhouse Gasses: Generation and Sequestration (oral).
✓ CO_2 Budgets and Greenhouse Gasses: Generation and Sequestration (poster).

Lee C. Gerhard, a DEG past president who has more than 40 years of experience in geology and environmental affairs, will present the DEG luncheon address titled "Energy and Environmental Challenges of the 21st Century" (see page 45).

DEG would like to acknowledge Tidelands Oil Production Co. for its sponsorship of the DEG luncheon, and thank them for their generous support of this event.

The DEG awards ceremony will be held in conjunction with the DEG luncheon. The DEG has two categories of awards:

✓ Category I Awards, which comprise the DEG Public Outreach Award, DEG Research Award, DEG Teaching Award and DEG Corporate Award for Excellence in Environmental Stewardship.

These are presented for outstanding contributions to understanding and communication of efforts to produce energy, minerals and water with minimal impact on environment; and for contributions to public understanding of our professional responsibility, whether by members of DEG or others.

✓ Category II Awards, comprising the President's Award, Honorary Membership and Certificates of Merit, are for DEG members.

The President's Award is presented in recognition of contributions for the advancement and betterment of the science and profession of environmental geoscience; Honorary Membership recognizes distinguished service and devotion to the science and profession of environmental geoscience and to the Division; and Certificates of Merit honor outstanding contribution to and meritorious service for the betterment of the Division and its membership.

The 2006-07 DEG Awardees are:

✓ DEG Public Outreach Award – International Petroleum Industry Environmental Conservation Association (IPIECA).
✓ DEG Research Award – Joanna Thamke.
✓ DEG Teaching Award – Wayne Pettyjohn.
✓ DEG Corporate Award for Excellence in Environmental Stewardship – U.S. Department of Energy.
✓ DEG President's Award – Robert J. Menzie Jr.
✓ DEG Honorary Membership – Steven P. Tischer.
✓ DEG Certificate(s) of Merit – Matthias Grobe, Craig M. Dingler and Gerald R. Baum.

Nominations are being accepted for 2007-08 DEG awards; visit the DEG Web site at http://deg.aapg.org for a description of the awards, a list of past recipients and a PDF of the nominations form.

* * *

The DEG Executive Committee recently approved the formation of two standing committees and one ad hoc committee. Inaugural conference call meetings for these committees are planned.

The missions of these committees include developing programs for AAPG annual, sectional, regional and international meetings, as well as lectures, short courses, and publications in each committee's respective area of expertise.

Vice president Michael Jacobs has been instrumental in the formation of these committees. They are:

✓ The **Hydrogeology Committee**, which has eight members. The committee chair is to be announced. DEG Immediate Past President Steven P. Tischer is committee vice chair.

✓ The **Environmental Geophysics Committee**, chaired by Bruce D. Smith, has six members.

✓ The **CO_2 Sequestration Committee** (Ad Hoc), co-chaired by Hannes E. Leetaru and Matthias Grobe, has five members.

* * *

An online version of DEG's quarterly, peer-reviewed journal, *Environmental Geosciences*, is now available to DEG members and non-member subscribers. Please visit the "Members Only" area of the AAPG Web site at www.aapg.org and select the gold button "SEARCH Environmental Geosciences Journal."

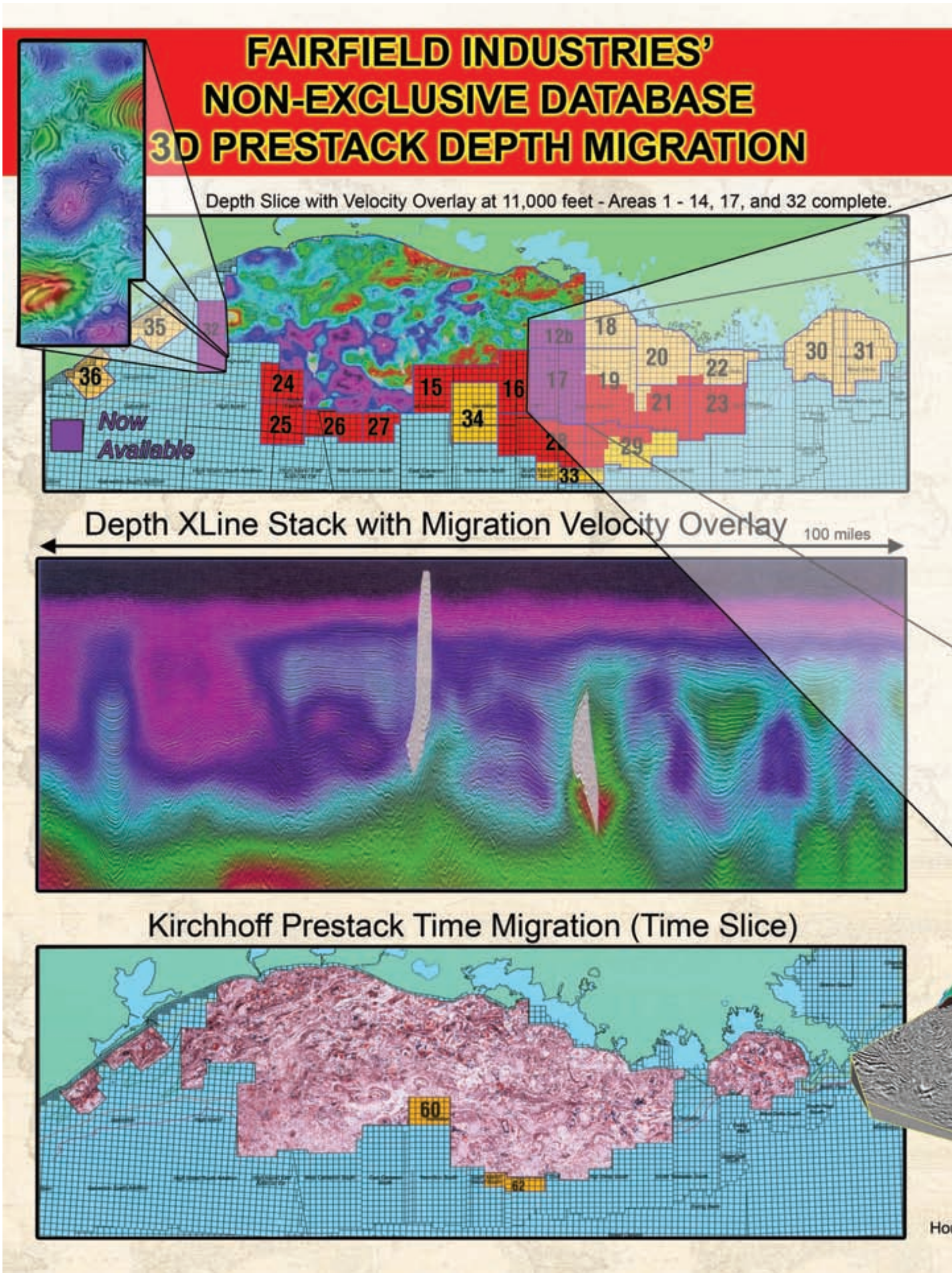
Issues for 2005 and 2006 are downloadable as zipped PDFs, and individual articles can be viewed online and as page images in PDF format. The Search feature provides access to articles from 2001 to present that can be viewed as page images in PDF format.

These articles are also available to non-members in Datapages Pay-Per-View.

This new membership benefit, facilitated by AAPG Divisions Manager Norma Newby, is in response to a DEG member's request for online journal access.

* * *

DEG recently received an AAPG Foundation grant to help fund production costs of *Environmental Geosciences*, and we are most appreciative of their support. ❑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