Sitting in my office, I can look out over the 17th Street Canal at an absolutely gorgeous fall day. Autumn has not quite reached this far south, but the clear skies and low humidity are here. It makes me want to be out on the golf course, but with my game I’m probably more productive and less frustrated writing this article.

After the heat of this summer I look forward to spending some time next June at the Annual Meeting and Convention in Jackson Hole, Wyoming. Late June (20-23) should be a great time as snow is usually (Continued on Page 16)

Note: This article is from the Houston Chapter, and is the sixth in a series submitted by SIPES Members and chapters. It was previously published in SEG’s The Leading Edge in November 2000, and was also presented at the SIPES 2010 Annual Meeting in Colorado Springs. A DVD presentation is available for rent through the SIPES Foundation Film Library.

If at first you don’t succeed, try something unconventional. Successful exploration for new reservoirs in mature trends often requires trying techniques unproved in the area. In a mature play onshore Gulf of Mexico, our initial exploration campaign with conventional 3-D seismic was disappointing. However, attention to rock properties coupled with application of a novel processing technique, allowed us to develop a solution to our dilemma.

The densely drilled, clastic Oligocene Vicksburg Formation in south Texas has produced more than 3 trillion ft$^3$ of gas and 100 million bo since production began in the 1920s (Figures 1 and 2). As product prices have increased (especially for gas) and exploration technology has evolved, exploration targets have changed from shallow, normally pressured oil accumulations to deeper, overpressured gas reservoirs. Exploration efforts have typically been based on subsurface geology along with structural and stratigraphic interpretation of seismic data. To our knowledge, there is no published work on the use of (Continued on Page 19)
The following reports on national and environmental issues were presented to the SIPES Board of Directors at the board meeting on October 6, 2010. Vice President of National Energy Marc D. Maddox, authored the National Energy Report, and Sue Cluff submitted the Environmental Committee Report. The views and opinions expressed are those of the authors. Some of the information presented is in the public domain and is available from a variety of sources; other references were selected by the authors, and are noted on their reports.

**NATIONAL ENERGY**

As I sit writing this article in mid-October, oil is trading in the $82-$84 range and two major news events are making headlines. One is the lifting of the offshore drilling ban by President Obama. Thank goodness for democracy and the mid-term elections. Public pressure to resume drilling in the Gulf of Mexico and anti-incumbent sentiment has forced the President to pull his head out of the sand and try to reverse some of the damage done to the economy of the coastal states in hopes of salvaging perhaps a few seats in Congress.

Actual resumption of drilling in the deep offshore is another matter. The reality is that the Deepwater Horizon lies in ruins at the bottom of the Gulf, and two more of the world’s fleet of giant rigs that were once active in the deep GOM have moved on to greener pastures overseas. They won’t be returning anytime soon. Apparently there are other governments around the world that see the advantage of exploring for oil off their coasts, and other countries whose citizens wish to reap the economic stimulus of free market capital injection that creates thousands of jobs, produces a sellable commodity, and results in a source of highly efficient low-cost energy. If only our leaders in Washington could see things so clearly.

The political obstacles to resuming exploration in the GOM are equally daunting, if not more so. Members of President Obama’s commission on the oil spill bicker over the draft language of its findings. Although the stated need is the resumption of drilling in the Gulf, each member of the commission is seeking to make a political statement as well. Commissioner Frances Ulmer, Chancellor of the University of Alaska Anchorage wants to use the report to “get to some imaginary goal of completely eliminating imports,” with the helpful suggestion that “if you went to all electric cars, 70% of our oil usage would go away.” I’m not kidding: this is part of the deliberation being held by the commission. Like many politicians, Chancellor Ulmer apparently believes that electricity comes from a plug in the wall. The more plugs you make, the more electricity you have. Aha! Problem solved: mandate the installation of more electrical outlets!

The second major news event is the rescue of the Chilean miners. What a triumph of free-market innovation. The technology that resulted in the rescue is truly astounding. From fiber optic video and communications links to socks made with copper fiber that consumed foot bacteria and minimized odor and infection, to the hammer bits and drilling rig built in the good old USA. Technological innovations, driven by "greedy capitalists" seeking "evil profits," from countries whose citizens are free to exercise their creative impulses, were responsible for the successful rescue of the 33 trapped miners. All of which

(Continued)
was facilitated by a local government that was willing to accept offers of help from foreigners (not foreign governments, but individuals and companies) without worrying about who would be running the equipment. Contrast this with our own government’s panicked and politically-driven decisions made in reaction to the Macondo blowout, and there is obvious room for improvement. Here’s to the hope for some real change in Washington this November.

Since the last National Energy article in the Quarterly there have been several developments:
• The Macondo Blowout was officially declared “dead” on September 19.
• China has emerged as the world’s number one consumer of energy.
• U.S. Government is pursuing a weak dollar policy. This is creating a surge in commodity prices – gold is at an all-time high – and will in the near term lead to an increase in oil prices. The dollar spent all summer at $1.27 against the Euro, but recently has traded at $1.40. Higher prices for globally traded commodities will result. Gold and oil most obvious.
• Chinese National Offshore Oil Company (Cnooc) has made a deal with Chesapeake Energy to finance its drilling in the Eagle Ford Shale play in South Texas.

Current U.S. policy is to devalue our currency in order to inflate our way out of recession. The Dollar Index declined by 6.1% in September and 13% since June. This has resulted in higher oil prices. At the OPEC meeting in mid-October the main topic of discussion was not compliance with production guidelines, but instead the weak dollar. As the dollar weakens, prices go up. Some members called for a price of $100/bbl to offset the devaluation, stating that the "real price" of oil is $20 less than current levels. OPEC seems prepared to seek a trading range of $80-$100. All of this is good for those of us selling oil in the United States.

The major issue facing the oil and gas industry at this time is the expansion of power over state and local regulatory agencies by the federal government. To accomplish this goal, the Environmental Protection Agency has expanded its already ambitious efforts to oversee all oil and gas and related energy industry activities. The EPA has gone off the reservation since the election of a liberal majority in the House of Representatives, and accelerated the push under the new administration in Washington. Make no mistake that these folks are the industry’s worst enemy. What cannot be accomplished by legislation because of lack of popular support, the EPA is working to accomplish by fiat. This is a frightening development because it involves the expansion of power at the bureaucratic level, unaccountable to the voting public. This war is directed at all human activities, especially those involved in manufacturing, or the production of natural resources or energy – essentially any remaining domestic non-unionized base industries. Two major battles are being waged.

The first is directed against frac stimulation of shale reservoirs. The weapons employed are the use of misleading propaganda to incite fear of groundwater contamination and exploding houses in the general public (see the recent show Gasland on HBO). The theory is that fracturing wells will allow natural gas to seep into shallow aquifers, from whence it will be transported into your home, and the next time you turn on the faucet – Ka-blam! You and your loved ones and all of your worldly possessions will be consumed in a fireball! It is interesting to note that many years ago I worked on a prospect in the Powder River Basin, and one of the indicators of the presence of natural gas was the presence of gas in the groundwater which had been separated and used to heat and light ranch homes – since 1910! There are many similar occurrences around the country that existed long before frac stimulation began in the oilfield. A second point of contention was the "mysterious" and "dangerous" chemicals being injected into the ground. There is notably less focus these days on the "secret" chemicals used in frac fluids since Range Resources revealed that the primary ingredient in their frac jobs is water (over 98.5%).

The second major battleground is EPA’s Region 6. As mentioned in the last quarter’s article, Region 6, headed by Al Armendariz, includes half of the United States’ domestic refining capacity. It also includes Texas, which seems to have been specifically targeted for the crime of daring to have a robust economy. The Texas Commission on Environmental Quality (TCEQ) was formed to oversee compliance with EPA regulations many years ago. Now the EPA is attempting to expand their power over TCEQ and state regulatory bodies. The goal here would be to require permitting of some kind at a federal level for all oilfield activities. The first shot fired over the bow was the declaration by the EPA that CO2 is a pollutant. With this accomplished, the EPA is now busy "redefining" acceptable levels of CO2, Ozone and Mercury. The conflict is centered on the Permit by Rule/Standard Rule that TCEQ is now considering. This results from the EPA:
• Redefining acceptable ozone levels from 85 ppb to 75 ppb.

(Continued)
• Proposal to further "redefine" acceptable levels to as low as 60 ppb – which would put Big Bend National Park and everything east of I-35 out of compliance, granting the EPA broad authority to regulate.
• Use of infrared cameras to detect emissions has expanded EPA ability to play "gotcha."

TCEQ has held meetings throughout the state for industry feedback. At the meeting in Ft. Worth an estimated 600 people showed up and the debate was, shall we say, somewhat less than civil. A second meeting was held in Midland and was conducted in a more orderly manner. The most recent one was held in Austin on September 14. These meetings are being held to gather industry input into the new regulations. The hope is that the new rules can be written so as not to stifle industry activity. What remains to be seen is if this will satisfy the EPA. For additional information on this issue please go to the following website:

http://www.tceq.state.tx.us/permitting/air/nav/air_pbr.html

The side benefit of this activity, so far as the EPA is concerned, is an unlimited expansion of power over state and local agencies. The ultimate end result is that the federal government will usurp any other regulatory body, rendering them meaningless. EPA wants to have control over all permitting of every facet of oil and gas activity.

Final Comments

In an ironic turn of events, a new federal report out on the Macondo blowout plays down loss of jobs on the Gulf Coast as "only 8,000 to 12,000" and "that only temporarily – they’ll return when the ban is lifted." Proving conclusively how insensitive and out of touch with reality the federal government is. The loss of jobs cited are direct oil industry jobs and do not take into consideration the economic disruption of loss in sales tax, tourist revenue, and all ancillary and related businesses along the Gulf Coast that depend on the base industry of oil and gas exploration and production. Government cites the loss of jobs as the result of a reduction of $1.8 billion in drilling by oil and gas companies during the six-month ban. Guess this is a tacit admission of the efficiencies of the free market. $1.8 billion of private money gets you 8,000 to 12,000 jobs, while it takes over $1 billion of federal "stimulus" to get that same amount of "created or saved" jobs...hmmm. Contrast this with how Washington claims victory over the "failed policies of the previous administration" whenever it "creates or saves" a couple of hundred jobs here and there!

Let's face it: The Macondo blowout was a tragic event. Eleven lives were lost. The industry's excellent safety record was set back decades. A lot of oil was expelled into the Gulf of Mexico.

(Continued)
The Macondo blowout was not the mother of all environmental disasters. Predictably, much of the oil was consumed by bacteria. Much was also dispersed and degraded by wave, chemical and solar activity.

The true disaster in this story is the economic disaster created along the Gulf Coast by the inept actions and over-reaction of the federal government. Politically-motivated individuals worked tirelessly to raise the anxiety of the general population in hopes of achieving their gains – that being the decimation of the domestic oil industry. The hysterical tone of news releases, combined with exaggerated and premature damage reports that resulted from a frenzy of media one-ups-man-ship and irresponsibility, caused as much damage to the summer tourist business as the drilling moratorium did to the oil business. Guess you could call it a "man-made disaster." No wait - that's the new Washington political-speak for a terrorist attack. At any rate, let's hope Washington's reign of terror on the Gulf Coast ends soon.

**ENVIRONMENTAL REPORT**

**Hydraulic Fracturing Debate — Update**

Debate over hydraulic fracturing is becoming a media circus. This is especially exemplified by the movie *Gasland* which was shown on HBO and is available On Demand for another two years. In this "documentary," a film maker is offered $100,000 for leasing his Pennsylvania farm and he decides to travel around and see how the oil and gas industry is affecting people. People told him all sorts of anecdotes about how they got sick or their animals died, all because gas wells were "fracked" nearby. Obviously, gas drilling is devastating for people all over the country — not to mention pronghorn, which he insists are nearly extinct. And the gas industry is completely unregulated, doing whatever they please. The movie is apparently unconcerned about the actual facts and evidence, but is very dramatic and well made, convincing to many. Most of the incidents have been debunked in the media and on various websites (COGA, EID, KIOGA, etc.), but since these are all industry related groups, their authority is challenged.

It's easy to understand why some of these concerns are now appearing. The Marcellus gas shale boom in New York and Pennsylvania is occurring near highly populated areas that are unfamiliar with drilling activities. The activity comes with lots of truck traffic, noise, and mess and most people are not profiting directly from the boom. Their uneasiness was not reassured by the Macondo blowout — reinforcing that accidents happen and they can be catastrophic.

Hydraulic fracturing has been used to stimulate wells for over fifty years and there are no confirmed cases of aquifer contamination due to the process. This has been confirmed by many state regulatory agencies. The EPA spent four years studying hydraulic fracturing in coal bed methane wells in response to a court case in Alabama and released a report in 2004 (http://www.epa.gov/safewater/uic/pdfs/cbmstudy_attach_uic_final_fact_sheet.pdf) where they concluded that hydraulic fracturing "poses little or no threat" to drinking water and "does not justify additional study at this time." The study has been criticized for primarily relying on literature, and the EPA did admit they would like to have more data. Reports have also been released by MIT (http://web.mit.edu/mitei/research/studies/naturalgas.html), U.S. DOE and the Ground Water Protection Council, Interstate Oil and Gas Commission (http://www.gwpc.org/e-library/documents/general/-State%20Oil%20and%20Gas%20Regulations%20Designed%20to%20Protect%20Water%20Resources.pdf) all supporting the safety of hydraulic fracturing.

Last year, Congress ordered a broader study of hydraulic fracturing because of criticism of the original EPA study. Public hearings were held in September to discuss how to construct the study. Hundreds of people showed up with signs — including "Kids can't drink gas" and "Say yes to science, no to paranoia" (AP, 9/14/2010). The study is scheduled to take until 2012 to complete and may take longer.

It is unlikely that any legislation regulating fracturing will be enacted before the study is completed, but several laws requiring frac companies to reveal the composition of their frac fluids are being considered. The Wyoming Oil and Gas Commission voted this summer to require full disclosure of frac fluid components (June 8, 2010, Colorado Independent). Many observers have concluded that hydraulic fracturing will not be banned. Scientific evidence will not support it and the economic results of a hydraulic fracturing ban would be enormous. Gas would be in short supply and prices would skyrocket. Even New York and Pennsylvania are becoming dependent on the income from production. Energy Secretary Steven Chu was quoted in January 2010 on TheHill.com "The question is, can you do this right so it doesn't leak into the water table. I think you can." While states are continuing to monitor drilling, more regulations may appear. The BP oil spill disaster probably increases the chances that the EPA may end up taking over regulatory duties.

To be fair, there have been incidents of water contamination associated with drilling activity. These mostly were a result of surface accidents and sloppy well design such as bad cement jobs. At least one of the infamous "flammable water" incidents turned out to be a result of a bad cement job in a nearby well in Dimock, Pennsylvania. Unfortunately, this was followed with a second accident in the same area when a contractor spilled frac water and gel into a creek and wetlands. In Louisiana, fluid leaked from a well pad into an adjacent pasture and a number of cattle died. In each case, a large fine was assessed and the company has now been subjected to increased scrutiny. A report by Tudor, Pickering, and Holt (http://tudor.na.bdvision.ipreo.com/NSightWeb_v2.00/Handlers/Document.ashx?i=f99a3285dd78467f876ec4d4de5713956) concludes that the result of ongoing studies will probably be new regulations on well design and surface activities, more oversight, and increased compliance costs.

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**NOVEMBER 2010**

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Many thanks to the members listed below for their continuing support of our society.

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(Continued)
David G. Campbell, #1729, of Oklahoma City, Oklahoma was one of three people honored by the Oklahoma City Geological Foundation at their 2010 Legends’ Dinner on November 4 at the Jim Thorpe Museum.

Terry L. Hollrah, #1920, of Oklahoma City, is serving as general chairman of the 2011 AAPG Mid-Continent Section Meeting. It will be held in the city from October 1-4, 2011. Joining him on the Organizing Committee are Suzanne M. Rogers, #2729, who is chair for the meeting’s prospect expo; Thomas C. Cronin, #1620, is working with finances, fund raising and sponsorships.

James R. (Dick) Howell, #1913, is co-chairing the exhibits committee; Joel A. Alberts, Limited Member, is co-chairing the field trips; David G. Campbell, #1729, and H.W. "Dub" Peace, #2017, are co-chairs of the meeting sponsorships and finances. The meeting website is www.2011AAPGMC-sectionmeeting.org.

Linda R. Sternbach, #2638, is the general technical program chair for the AAPG 2011 Annual Convention & Exhibition that will be held in Houston, Texas on April 10-13, 2011.

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DENVER

On July 22, the Denver Chapter of SIPES met at Wynkoop Brewery in downtown Denver to hear a presentation by geologists Tommy Thompson, #1872, and Jim Howe from Boulder, Colorado. Their talk, based on their studies with co-worker Susan Morrice was entitled, "Discovery Thinking in Belize." The talk consisted of an open presentation with many illustrations outlining the mega-regional tectonic regime, integrative analysis and intuitive revelation (i.e., eureka moment) that gave rise to the first production in Belize. Prior to 2005, over 80 wells were drilled in the country, many of which yielded significant shows of oil. The Spanish Lookout field, discovered in 2005, is producing approximately 5,000 BO of 38 degree gravity oil from the Cretaceous Yalbac and Hill Bank formations at modest depths of approximately 3,400’. The field, operated by Belize Natural Energy Company, is estimated to have 40 MMBO in place with recoverable reserves of approximately 11 MMBO.

On August 22, approximately 35 members, spouses and friends met at Fox Hollow Country Club in Lakewood for an afternoon of golf followed by a barbeque dinner. Many thanks go out to Chapter Treasurer Tom Stander who organized the event and to those individuals who sponsored the event.

The September 23rd luncheon meeting featured Kirk Johnson, Chief Curator and Vice President for Research and Collections, Denver Museum of Nature and Science with his talk entitled, "The Cretaceous-Tertiary (K-T) Boundary Extinction and the Ongoing Debate over Its Cause." The K-T boundary catapulted to fame in 1980 with the proposal by Luis and Walter Alvarez that an asteroid impact had caused the demise of the dinosaurs and their world. Kirk has been studying the problem worldwide since 1981 with emphasis in the Denver Basin since 1997. He, along with fellow researcher Bob Raynolds, coordinated the coring of a 688 meter deep well near Kiowa, Colorado in 1999. The core was systematically analyzed using palynology and magnetostratigraphy to aid in correlation of surface outcrops and to also determine the exact position of the K-T boundary (at 302 meters) in the core. The data were then used to calibrate a three-dimensional model of the Denver Basin stratigraphy based on electric logs. Based on this model, the position of the K-T boundary throughout the basin was projected onto a digital surface topographic map from which potential outcrop areas were surveyed by small aircraft. This work resulted in the identification of the West Bijou K-T boundary site in eastern Arapahoe County, Colorado which has been undergoing detailed studies since its identification. At this newly discovered location, the precise age-dating of volcanic ash beds bracketing the boundary have refined the date of impact at a soon-to-be-published age of 66.05 million years. This date is nearly 700,000 years earlier than previously thought.

While the asteroid impact theory has been widely accepted since 1988, the theory retains a small but steady band of detractors who argue that widespread lava flows in India, sea level drops or other events have been responsible for the decline of late Cretaceous life forms. However, Kirk Johnson’s presentation of the fossil and mineralogical data from this site, as well as other sites worldwide, leaves little doubt in this geologist’s mind that the large Chicxulub asteroid impact in Yucatan is the cause of the mass extinctions observed at the end of the Cretaceous.

David Read
Secretary
FORT WORTH

The September meeting of the Fort Worth SIPES Chapter was held at the Norris Convention Center, 304 Houston Street in downtown. Chairman Russ Hensley opened the meeting and welcomed the twenty members and five guests. No Fort Worth SIPES Chapter meetings were held in July or August because of the number of people on vacation during that time frame.

Several chapter members attended the SIPES Convention from June 21-24 in Colorado Springs. The fossil hunting field trip to Florissant was very popular! Next year’s meeting will be held in Jackson Hole, Wyoming.

Vice Chair Terry Mayfield-Cowan reported that the August 2010 SIPES Quarterly was mailed to all SIPES members and she complimented Russ Hensley on his article in it.

National Director Dennis Gleason reported on the SIPES Foundation scholarships. Scholarships in earth sciences were awarded in amounts ranging from $1,250 to $2,000. He encouraged members to spread the word to earth science students.

Russ presented a talk by Jory A. Pacht, #3054, called “So You Want to Be an Independent? Welcome to the Sales Department.” There are salespeople who sell small-ticket items on a one-time basis, and they have no need for networking or to build relationships. In a different sales environment, for instance oil and gas prospect generators, it is most important to network, build trust, and establish long-term relationships. Every salesperson solves problems and satisfies needs. The most important sales skill is listening. Methods that don’t work for high-ticket sales are unsolicited proposals or resumes, junk mail, junk faxes and junk emails. The four stages of making sales are identifying leads, making the first contact, presenting your case in an orderly fashion, and closing the sale.

The Fort Worth Chapter will continue to meet at the Norris Convention Center through December, when new officers will be elected.

SIPES Fort Worth Chapter

SAN ANTONIO

The July meeting featured Ron McGinnis from the Department of Earth, Material and Planetary Sciences at the Southwest Research Institute in San Antonio. Mr. McGinnis presented the “Influence of Fault Zone Deformation on the Permeability of the Glen Rose Formation: Hidden Valley Fault Zone.” This topic pertained to the ground water sources and reservoirs in the San Antonio region and how various aquifers may be connected in some fault zones. Mr. McGinnis went into detail about how various faults may connect the Edwards and Glen Rose Aquifers and how ground water may move from one to the other in fault zones.

Our August luncheon featured Professor Allan Dutton of UTSA, Associate Professor of Hydrogeology, Interim Chair, and Department of Geological Sciences. Dr. Dutton graduated with a Ph.D. in geological sciences from the University of Texas at Austin and has been at UTSA since 2004. The title of the presentation was “Hydrogeologic Explanation for Occurrence of Updip Oil Fields and Postulated Coalbed Natural Gas in the Wilcox Group in Central Texas.” Dr. Dutton has developed and worked on computer models of groundwater resources in several major aquifers, including the Edwards, central Carrizo-Wilcox, Ogallala, and the Trinity-Woodbine. It was a very well documented presentation and the members greatly appreciated Dr. Dutton taking the time to be the speaker for the SIPES luncheon.

In September, Donna Balin, #2606, a member of the SIPES National Board of Directors, presented “Population Growth and Impact on Resource Availability.” The presentation was again well documented with a PowerPoint presentation that illustrated what effect the trending increase in the world’s population will have on resources such as water, hydrocarbons, etc. I greatly appreciate Donna taking the time to prepare and present the topic to our local SIPES chapter members.

J. L. Jones
Chairman

DALLAS

The Dallas Chapter of SIPES took a summer break through August. Many of us escaped the sweltering heat in places with beautiful geology. With any luck, we returned with renewed vigor!

Our September luncheon meeting at the Petroleum Club included an excellent talk by Brad Robinson, vice president of engineering at Matador Resources in Dallas. Brad’s topic was “Designing Completions and Fracture Treatments for Horizontal Wells.” After an initial horizontal drilling video, Brad discussed design issues such as where to land the horizontal lateral and how to complete it. His experience is that the frac gradient is higher at the base and also, at the top of a prospective unit produced water and frac control are issues. He recommended placing the lateral in the middle where the most brittle Young’s modulus can be found. Silica and carbonate in a shale propagate fracture treatments better than ductile shale alone. Brad advocated cementing production pipe for frac and fluid control, but he acknowledged that “cemented wellbores don’t want to frac” and that it is tough to get perfs open. Brad stated that at high injection pressures, fractures tend to compete with one another. For this reason, he advocates limited entry perfs. A closing tidbit of the talk was that refracs are generally oriented 90 degrees to the first frac because depletion changes the stress field. We appreciate Brad’s willingness to share his knowledge.

The Dallas Chapter is saddened to report the passing of long time member Roy Sharrock in mid-October of this year. Roy was a talented geologist whom many of us had the privilege of learning from. He will be greatly missed. By the time you read this, the November 3rd E&P Forum titled “The New and the Unusual” will have hopefully been a big success.

Carol Shiels
Secretary
MIDLAND

The Midland Chapter meets on the third Wednesday of every month (except December and February) at 11:15 A.M. All meetings are at the Midland Country Club.

Our July meeting occurred on July 21 and the featured speaker was Knute “Cody” Lee of Westward Energy in Albuquerque, New Mexico. Cody’s discussion was far reaching and uplifting. His view of the future of the industry was somewhat contagious and enlightening. Mr. Lee’s discussion revolved around the future and past of not only the oil industry, but also other industries that have seen boom to bust cycles. Cody comes from an oil industry background which adds to his perspective on the future. Cody Lee was raised in Albuquerque, and knew he wanted to be an entrepreneur upon starting his first business at age nine mowing lawns. He was involved in starting Ironclad Performance Wear, which grew into the 55th fastest growing company in the U.S. As a result, Cody’s perspective was somewhat different from most traditional oil industry personnel.

Our August luncheon meeting, held on the 18th, was very well-attended by many members and a large number of guests to hear a regional celebrity in the industry. Bob Gallagher of Rio Rancho, New Mexico, owner of BG LLC, was the featured speaker. BG LLC is a government, political and public affairs consulting company. Mr. Gallagher has spent over twenty-five years in public service and was recently the president of the New Mexico Oil & Gas Association. Bob’s discussion focused on the oil and gas industry business environment in the state of New Mexico in the coming years. He elaborated on the decline in production over the last several years and how that has affected state severance tax revenue. This has been, as he spelled out, due primarily to an onerous business environment created by numerous rules and regulations promulgated by the current state government. The large number of guests in attendance illuminated what a major concern the future for producers would be in the state should the current policies be extended or added to. The “pit rule” which has caused a huge increase in the cost of doing business, was discussed in some detail. Specifically, one case where the state was attempting to force an operator to reclaim a pit site that had been closed prior to the current requirements being instituted. Other proposed regulations covering electric lines in certain areas were mentioned. Bob discussed the amount of severance tax declines in the last eight years due to the reduction in drilling. His summation was for operators to wait and see if the November statewide elections caused an administration change. Numerous questions ensued from members and guests and a very lively and informative Q & A ensued.

On September 15, the Midland Chapter gathered at Midland Country Club. McClure Oil of Midland was the luncheon sponsor. Jason Simmons of DrillingInfo in Austin was the speaker. Jason discussed the ongoing Eagle Ford Shale play in the Middle Texas Gulf Coast. His talk was very detailed and carried with it a number of colorful slides and presentations put together at DrillingInfo. Jason has a B.A. in mathematics from University of Texas at Austin, and an M.S. in finance with a focus on energy risk management from the University of Houston. His perspective on the Eagle Ford boom in South Texas was broad-based and covered a very large portion of the trend. He demonstrated to those of us in West Texas familiar with the “Wolfberry” boom that the Eagle Ford was indeed a significant resource play in the early stages of development.

On September 15-17, the Midland Chapter of SIPES participated in the West Texas Geological Society’s fall symposium. Over five hundred participants registered for the event. The Chapter supported the WTGS by purchasing space in a booth in the exhibit hall. SIPES members from the Midland Chapter manned the booth for the three-day symposium. These included David Overton, Don Eckerty, David Farmer, Craig Smith, Robert Wynne, Jack Naumann and Marc Maddox, along with numerous others who dropped by from time to time. Ten potential members signed up to get more information, including one who brought a completed application by the booth looking for sponsors! Thanks to those who participated in making this a successful venture. Thanks also to SIPES national for providing signs, materials to hand out, and a Power Point presentation to display.

Robert Wynne
Secretary

At the WTGS Fall Symposium SIPES Booth were members (L to R) David Overton, David Farmer, and Lou Mazzullo.

Jonathan Eckerty with Program Chair Tom Wilson.
NEW ORLEANS

The SIPES New Orleans Chapter "kicked-off" its 2010-2011 meeting year with a September 21 luncheon held at Andrea's Restaurant in Metairie. Due to a scheduling conflict, our luncheon speaker advised that he could not attend. However, two local members, Art Johnson, #3153, and Tom Klekamp, #2823, provided separate presentations to the membership during the meeting.

Art Johnson gave a work-in-progress update on the New Orleans Geological Society's "soon-to-be-released," latest publication entitled "Oil & Gas Fields of South Louisiana 2010." Utilizing the Louisiana Department of Natural Resources' SONRIS database, the technical study group of NOGS identified over forty fields in south Louisiana that had been rejuvenated or discovered as a result of proprietary and non-proprietary 3-D seismic data acquisitions during the 1990s. The new volume will highlight twenty-six field studies and will serve as an update to its last onshore publication completed in 1987. The publication will be available on CD and hard copy. The cost of the CD is estimated at $75. The hard copy will be available in both black and white and color (limited edition only) versions for a cost yet to be determined. The anticipated release date is December 2010. More information concerning the publication will soon be available on NOGS' website, www.nogs.org.

Local astrogeology buff, Tom Klekamp, gave an interesting presentation to the membership entitled "Tides, Tidal Forces and Energy." Tom showed how variations in the earth's tides have commercial, military and energy applications. Tides and their effects have been studied by mankind for centuries, the earliest effort dating back to 2200 B.C. in India. Because the tidal range in the Mediterranean is hardly noticeable, the Greeks never mentioned the tides in their writings; the Romans knew of their existence beyond the Gates of Gibraltar in the northern coast of present day France and Britain. The science behind tides was not developed until the Renaissance during which Galileo and Descartes advanced hypotheses; later, Newton with his theory of gravitation, emerged as the scientific tidal expert. In the 19th century, LaPlace and Kelvin developed the principle of harmonic motion to tides. Predicting tide measurement became available in Germany during the 20th century allowing for the development of tide tables for the maritime industry. Today, the TOPEX/Poseidon Measurement System, which is a GPS satellite-based system, provides for our tidal predictions. Energy production from tides has recently been developed in various parts of the world. The first tidal power unit, the LaRance River Tidal Power Station, was built in Brittany, France in 1966 and today generates 240 megawatts of electricity. (For comparison, a typical gas turbine generator can develop about 200 MW.) Between 1984 and 2010, six additional units have been placed on electricity production in Canada, China, France, Russia and South Korea. Potential future locations have been identified in Canada, France, India and the United Kingdom. South Korea, known for high tidal ranges, has one under construction and working on two proposals for two additional tidal stations.

Al Baker
Secretary

SIPES LOGO GIFTS

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LAFLAYETTE

After a summer break, the Lafayette SIPES Chapter kicked off another year on September 8 with a meeting at the Petroleum Club. In addition to our luncheon speaker, chapter members had an opportunity to meet two SIPES Foundation Scholarship recipients (see page 29). Ms. Racha Boukadi, is a petroleum engineering graduate student at the University of Louisiana at Lafayette and Mr. Sean Kerrin, is a graduate student in geology at LSU.

Our September speaker was Dr. Carl Richter, chairman of the geology department at the University of Louisiana at Lafayette. He discussed his recent work with the Ocean Drilling Expedition.

Dr. Richter did an excellent job presenting his experiences on his extended stay on one of the drilling ships. Combining his personality with his hard work made this a very enjoyable monthly meeting and a great way to kick off the new year. Jim Gamble did a great job organizing the fall dove hunt which is available to our SIPES members and guests. As I understand it, quite a few attendees bagged their limit.

Danny Fredericks
Chairman

SIPES Chapter Meeting Information

AUSTIN
Chairman: Ward Davenport
Secretary: TBA
Treasurer: Dwight Cassell
Meets: The County Line
(On the Hill)
1st Thursday

CORPUS CHRISTI
Chairman: Stephen Thomas
V-Chrmn: Dan Neuberger
Secretary: Eldon West
Treasurer: David Desenberg
Meets: Town Club
Last Tuesday of month

DALLAS
Chairman: Doug Essler
V-Chrmn: Don Muth
Secretary: Carol Shiels
Treasurer: David Scull
Meets: Dallas Petroleum Club
3rd Tuesday

DENVER
Chairman: Jim Applegate
V-Chrmn: Travis Brown
Secretary: Dave Read
Treasurer: Tom Stander
Meets: Wynkoop Brewing Co.
4th Thursday

FORT WORTH
Chairman: Russ Hensley
V-Chrmn: Terri Mayfield-Cowan
Secretary: TBA
Treasurer: TBA
Meets: Norris Conference Center
Variable dates

HOUSTON
Chairman: Steve Hartzell
V-Chrmn: Mike Jones
Secretary: Paul Babcock
Treasurer: Scott Daniel
Meets: Petroleum Club
3rd Thursday

LAFAYETTE
Chairman: Danny Fredericks
V-Chrmn: Travis Helms
Secretary/ Treasurer: Steve Sinitiere
Meets: Petroleum Club
2nd Wednesday

MIDLAND
Chairman: Don Eckerty
V-Chrmn: Tom Wilson
Secretary: Robert Wynne
Treasurer: John Kullman
Meets: Midland Country Club
3rd Wednesday

NEW ORLEANS
Co-Chairmen: Louis Lemarie’ and Art Cerniglia
V-Chrmn: TBA
Secretary: Al Baker
Treasurer: Reese Pinney
Meets: Andrea’s Restaurant
3rd Tuesday

OKLAHOMA CITY
Chairman: Harold Hanke
V-Chrmn: Jim Franks
Secretary: Mike Pollok
Treasurer: Victor Cooper
Meets: The Petroleum Club
Bank One Bldg., 35th Floor
1st Wednesday

SAN ANTONIO
Chairman: J. L. Jones
V-Chrmn: TBA
Secretary/ Treasurer: Joe Finger
Meets: Petroleum Club
3rd Thursday
HOUSTON

At our Thursday, July 15 luncheon meeting, 124 attendees listened to David Patton, attorney with Locke, Lord Bissell & Liddell L.P., present his topic "Seeking and Purchasing Onshore Oil & Gas Assets." Many of our SIPES members are very successful oil finders, but may not be familiar with the process of selling or purchasing producing properties. Mr. Patton provided a high level overview of the process and what folks on either end of a transaction should be expecting. He reviewed the normal steps one encounters beginning with the original offering, term sheets and data rooms. Companies that attend data rooms, analyze the data, and like what they see would then submit an offer with terms and conditions. After offers are received, there is further negotiation of a PSA (Purchase and Sale Agreement). Subsequent examination and due diligence periods would take 30-60 days. If seller and buyer are still aligned, there would be a closing on the sale of the properties. It is very typical for there to be a subsequent post-closing adjustment or settlement. While this is a typical road map for a purchase or sale of producing properties, every step of the way can be very complicated.

On Thursday, July 22, the SIPES Houston Chapter hosted our third Independent’s Day Celebration, appropriately named – Honky Tonk Blues! This event, provided free of charge to all attendees, was held at Blanco’s, one of Houston’s oldest and best country bars! We had record attendance, including SIPES members, spouses and potential new members. While attendees enjoyed great conversation, networking and their cocktails, Little Terry Rogers and The Blues Birds Band along with Al Bettis performed and got the place rockin’! Everyone feasted on the delicious bites from Max’s Wine Dive, including fried chicken lollipops, steak skewers and pulled pork sliders, just to name a few. Our Independent’s Day Celebration events have proven to be a wonderful way to get members, spouses and potential new members together in a fun, casual atmosphere. A HUGE thanks goes out to the following sponsors whose generosity allowed our chapter to host this free event: Dan Smith; Hankey Oil Company; Magnum Producing, LP; and Southern Star Exploration, LLC.

At the August 10 luncheon, attendees listened to Fred Goldsberry, P.E., #3229, present his "Reservoir Dimensioning and Energy Imaging," a unique way to evaluate reservoir geometry. His presentation began with the premise that pressure waves are generated by reservoir fluids as they pass through the pore spaces in the rock. He equated this to the sound that moving water makes in household plumbing. These pressure waves are evident as minute, discreet events that can be seen in constant rate pressure data measured in the wellbore. As the waves resonate within the reservoir they are reflected off the various boundaries that may be present in the field. These might include faults, pinch-outs or hydrocarbon contacts. Fred has developed a technique of de-convolving the pressure data in such a way that the distance to the boundaries can be determined. If there are multiple boundaries there is a unique solution for each of them. The comparison to seismic data is very good. However, the source in this case is internal to the reservoir and the picture that emerges defines the connected reservoir compartment.

The pressure analysis is done independently of the geological or geo-physical interpretation. Once completed, the two are brought together for comparison. Fred’s technique does not measure the direction to the barrier(s) so a little creative matching is sometimes needed. Once a major boundary is matched, the others generally fall into place. Several examples were presented and the comparison to the geologic maps was excellent. This technique has obvious applications in areas where geologic complexity and reservoir compartmentalization warrant an independent look at a producing field. It could give you a good reason to drill another development well or keep you from drilling an unnecessary one.

On September 16, Houston Chapter National Director Phil Martin, #2390, presented "The Resource Play Schism." He provided his perspective and insights on the issues raised by shale resource plays and the impact on our peer geoscientists. Simply stated, a schism is a split or division in a group (in this case referring to explorationists), that results in a difference of opinion, doctrine or skill set. The incredible acceptance, demand and movement of industry and capital into the unconventional resource plays have created such a dilemma for the practicing geoscientist.

Phil began his presentation by reviewing the technology breakthroughs and coined the phrase "horifrac" for the combined technologies of horizontal drilling and stage-frac completions that have enabled the shale resource plays to be successful. The demand of industry and Wall Street

(Continued)
Chapter News Continued

for these plays has created a split among the geoscientist community between those who practice in this area and those whose careers have focused on conventional exploration.

The success of conventional onshore exploration over the years has led to diminished expectations and returns for the onshore explorer. Many of our onshore basins are extremely mature when it comes to onshore drilling. Yet, when a shale gas play comes through an area, conventional exploration is, for all practical purposes, off limits due to exorbitant lease bonuses typically associated with a shale play. The long life of these unconventional plays can keep these leases from recycling for 30+ years. On top of that, the rise in gas volumes from the shale gas plays has had a dramatic negative impact on gas prices. He suggested the high cost of land acquisition and that the economics of resource plays are generally a stretch for most independents.

Phil suggested that there is a way or choice that explorationists can make, that allows them to bridge the schism. He suggests that those willing to bridge the conventional-unconventional domain can have success. He suggests that revisiting the unconventional tight sands requires the geosciences expertise of both domains. Tight gas sands have been around for a long time, but a revisiting of this play type utilizing the recent shale-gas drilling and completion technologies can yield large returns and provide an opportunity for those geoscientists transitioning from conventional exploration. Early, but poorly developed or prematurely abandoned tight oil or gas sands, could yield an opportunity to expose a geoscientist to large play potential and lower risks. The conventional explorer can easily understand and quantify this tight sand resource and allow it to be better exploited with the fantastic technologies that have been developed for the unconventional shale gas plays.

The Houston Chapter of SIPES held its 15th annual Continuing Education Seminar on Friday, September 24 at the Marathon Conference Center on San Felipe. This year's seminar, the largest yet, was attended by 152 industry professionals. The good attendance was likely due to the relevant topic which focused on oil resource plays. The attendees represented independents, company personnel, and academia.

The talks were divided into two categories, trend studies and exploration technology. Two talks focused on the Eagle Ford Shale. Lauren Peschier with Newfield discussed her outcrop studies on the Boquilles formation which is an updip equivalent of the Eagle Ford. Even though it's an argillaceous limestone and not a shale where it crops out in Val Verde County, much can be learned from these rocks.

**IN MEMORIAM**

We regret to note the passing of the following members:

**William R. Dixon, #2731**
of Midland, Texas
who died on August 24, 2010

**Chesley C. Herndon, Jr., #1022**
of Oklahoma City, Oklahoma
who died on April 6, 2010

**James L. Mason, Jr. #712**
of Fredericksburg, Texas
who died on September 24, 2010

**W. N. McKinney, #2651**
of Spring, Texas
who died on August 18, 2010

**Matthew J. Parsley, #2505**
of Midland, Texas
who died on August 31, 2010

**Roy G. Sharrock, #2643**
of Dallas, Texas
who died on October 18, 2010

Thanks to the following SIPES Members who have purchased ads or sponsorships for the SIPES 48th Annual Meeting and 2011 Convention:

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Nancy and Duncan Dubroff enjoying the Independent's Day Celebration at Honky Tonk Blues.
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still in the high country holding the elk and buffalo herds to the valleys in Yellowstone Park. The Houston Chapter will be co-hosting this meeting with the national organization, and work has already begun on speakers and field trips in this area which has great natural wonders and geologically diverse terrains. The formula for a great time is the Beartooth uplift to the north and the Teton to the south with a large caldera in between. I also encourage all the members to show support for the convention and get great exposure at a national level by buying an ad in the registration and program books. (See page 15).

This fall also brings us to a time of change for the United States Congress where 36 of 100 Senate seats and all 435 House seats are to be chosen. The 111th Congress recessed September 29 and will not return until November 15, conveniently after the November 2nd election. Your vote on that day is to elect representatives to the 112th Congress. Many of those returning on November 15 will be the proverbial "lame ducks" of the 111th Congress.

There is no problem that many House and Senate members were informed by their constituents that their services were not performed well enough to keep their positions. Where I see a potential problem is that after their election loss they return to vote on the twelve appropriations bills for the 2011 budget. This is a vote that should have been taken months ago. The last act this group did before the September 29 recess was to pass a Continuing Resolution (HR 3081 as amended by the Senate) to temporarily fund certain government programs at the 2010 levels, for a total of $63.6 billion. This will carry the government to December 3rd. Prior to recessing again in late December, this group will attempt to decide on the spending budget ($3.8 trillion requested by President Obama) for 2011.

The House of Representatives is currently composed of 255 Democrats, 178 Republicans, with 2 vacancies. Various pollsters, as of mid-October, are estimating that the House makeup could change to 186-211 Democrats and 190-210 Republicans, with 34-39 races too close to call. The country is anticipating a great deal of change in both the Senate and the House. This is supported by the average of eight polls taken in September. (realclearpolitics.com/epolls/other/congressional_job_approval) showing congressional job approval at -71.6%. With the number of lame duck senators and representatives expected to be returning with the 111th Congress, there is widespread concern regarding the budgetary bills pending for 2011. I hope everyone made their voice heard by voting.

Other issues in this lame duck session will be extending the ethanol subsidies which are set to expire on December 31. These subsidies, part of the U.S. Energy Tax Act of 1978, are costing us $6 billion a year and have cost $45 billion since 1980. The Energy Tax Act, instituted by Jimmy Carter, gives a $.45 per gallon tax credit to refiners who blend ethanol with gasoline and imposes a tariff on foreign competition. This credit was worth $4.7 billion in 2009. Corn prices have been rising as the U.S. Department of Agriculture cut its outlook for corn yield this year and some policy makers are contemplating a global food crisis similar to that experienced in 2007-2008. The combination of a weakness of the U.S. dollar making corn more attractive to importers, ethanol production in the U.S. using 35% of the domestic crop, and the estimated yield decline are driving up corn prices. The debate on using food for renewable fuel will be interesting.

I made a trip to Washington, D.C. in late September for the Geosciences Congressional Visits Day organized by the American Geological Institute (AGI). SIPES is a member society in the federation that makes up AGI. The first day was a workshop on how to present to a congressman or their staff, with emphasis on supporting the appropriations for geosciences funding for research and grants. Having obtained my master's degree with the aid of a National Science Foundation (NSF) research grant, I was very willing to support NSF funding along with a number of other geoscience programs. I drew the line at supporting the Department of Interior, as Mr. Salazar continues to hold the Gulf of Mexico's energy industry hostage, while the president pushes for uneconomic renewable sources of energy at the cost of perfectly good sources established by the free market. The overall experience was one of obtaining a better understanding of the working processes of our government. I spoke one-on-one to Senator Vitter (see page 1) and with aides of Senator Landrieu and Representative Scalise from the state of Louisiana. My wife asked why I thought I needed to go. I guess it boiled down to being part of the solution or part of the problem. How can I complain if I do not attempt to take the debate to the politicians? Whether I was heard or made a difference is not as important as making the effort. I would encourage all our membership to contact any or all of their representatives by any means.

Secretary Salazar lifted the drilling moratorium on deep water drilling in the Gulf of Mexico on October 12. He did this because he feels new safety standards will make a disastrous oil spill much less likely. The effects of how the new regulations requiring inspections, reporting, third party recertification, and certification from the CEO of the operating company that all operations are being conducted in accordance with the new regulations, have yet to be determined. After all, the shallow water was not part of the moratorium, but permitting delays from the Bureau of Ocean Energy Management, Regulation and Enforcement (BOEM) did establish a de facto moratorium that has idled over (Continued)
one-third of the shallow water rigs. How many years it will take for the deep water industry to recover is dependent on a working versus adversarial relationship with the BOEM.

This far south we do not get the sudden and spectacular color changes in the fall from the sugar maples that are further north, but I am hopeful that with a little luck and hard work we can find enough hydrocarbons to stay warm and keep the lights on this winter.

Ken Huffman

I almost forgot to ask all of our membership to send in their short stories of "How I Became an Independent." Just a page or two for you to expose or thank the people or process that helped make you an independent. I have heard a lot of great stories and it would be educational and entertaining to get them written down before they are lost. Thanks for the memories.

WELCOME NEW MEMBERS

The following new members were approved by the SIPES Membership Committee from July 22 to October 26, 2010

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Model Form Changes

At the SIPES 27th Annual Meeting held in April 1990 and hosted by the SIPES Houston Chapter, SIPES Past President A.T. Green, Jr., #689, of New Orleans presented a paper entitled "Confidentiality Agreements — Why Not a SIPES Standard Form?" He recommended that a SIPES Committee be established to develop a standard form which might become widely recognized and accepted within the industry.

This effort evolved into a committee that included both SIPES and DPA Members; it was chaired by the late Robert Sabate', #1680, of New Orleans who was a geologist and an attorney. After several drafts, the DPA/SIPES Confidentiality Agreement was completed and accepted by the board of directors of both groups. In 1991, this first DPA/SIPES model form agreement was printed and became available to everyone. It was followed in 1996 by the DPA/SIPES Contract for Geoscience Services. Both forms are currently available for download as a PDF file on the SIPES website, www.sipes.org.

In 2009 the DPA recommended making changes to these agreements. A second joint committee was appointed to review these proposals. The committee is composed of the following members of both groups: Paul Britt, Mike Fogarty, Pete MacKenzie, Jack Naumann, Steve Reynolds, and Valary Schulz, who serves as the committee chair.

At press time, boards of both groups are reviewing proposed changes to these model forms. In the CA, additions to Item 3, Restrictions on Receiver's Future Activities, have been proposed. In the Contract for Geoscience Services, Article XVIII — Environmental Liability has been added. It is likely that the changes to both forms will be approved by the end of November. At that time, the revised forms will be available on the SIPES website.

SIPES Online Bulletin Board

A new bulletin board containing items of interest to SIPES Members is now available on the SIPES website - www.sipes.org. Currently the bulletin board has a section for Seminars & Events that contains notices about upcoming industry meetings and seminars. The Tributes section contains member obituaries and photos, as well as tributes to members. This information had previously been printed in the SIPES Quarterly, but the space available for print articles is very limited. This option allows for more detailed information to be published. The Special Notices section will be used for legislative alerts, and to give members information on industry issues of high importance. If you have announcements, obituaries, or other information you’d like to post in this section, please email it to sipes@sipes.org.

SIPES 2010 Member Survey

In October the SIPES National Board of Directors voted to conduct a survey of members to learn more about demographics, reasons for joining SIPES, and about the level of interest in member benefits currently being offered. They also wanted to learn if there were other benefits that could be offered in the future. The survey includes questions about participation in SIPES activities during the last three years and about chapter membership.

Some members have been given this survey at chapter luncheon meetings; it has also been sent to all At-Large Members. If you haven’t had a chance to complete the survey yet, it is available on the SIPES website, www.sipes.org and can be completed online. Thanks for your participation, and for returning survey forms to SIPES by December 31. Results will be reviewed by the SIPES BOD at their January 2011 meeting in New Orleans and printed in a future issue of the SIPES Quarterly.

SIPES Honors & Awards

The SIPES Board of Directors is accepting nominations for recipients of SIPES Honorary Membership, and the SIPES Outstanding Service Award. Names and supporting documents for nominees should be sent to the chairman of the SIPES Honors and Awards Committee, Dennis Gleason at 4621 South Cooper, Suite 131-343, Arlington, TX 76017 by January 5, 2011. The criteria for both SIPES Awards can be read in the SIPES Constitution located on the Membership Directory CD. The CD also contains a list of previous award winners. A summary of the award requirements is listed below.

- Honorary Membership is bestowed on members who have distinguished themselves through accomplishment and significant service to SIPES and any of the professions within the realm of earth science.

- The Outstanding Service Award is presented to members who have distinguished themselves in singular and beneficial service to SIPES.

Proposals for this award must be submitted, with documentation, to the chairman of the Awards Committee. The Awards Committee will retain submittals for candidates who are not selected up to three years for future consideration.

Winners will be honored at the awards banquet on June 21 during the 2011 Convention.
AVO in the area, probably because the Vicksburg trend is not a typical amplitude-supported play. There are very few examples of bright or flat spots on stacked data.

Beginning in 1994, a large nonexclusive 3-D seismic survey was acquired in the area and has led to increased exploration activity. The prime motive for the 3-D was to image the complex faulting and resulting compartmentalization of the Vicksburg. Given the mature nature of the area, typical exploration targets are moderate-potential fault blocks in productive intervals and higher-potential targets in deeper, untested sections.

In 1995, Edge Petroleum and Carrizo Oil and Gas licensed a 450-mile² portion of the 3-D survey. Early work led to the identification and drilling of several Vicksburg structural traps, resulting in one commercial gas discovery, one noncommercial discovery, and three dry holes. Given the moderate potential of the prospects, a 20% success ratio meant the economics of our exploration program were marginal. Hence, we were prompted to search for an exploration tool that would help us to improve our success rate.

Figure 3 shows two prospects drilled a few miles apart in our initial exploration campaign that targeted Vicksburg sandstones at 5500-7500 ft. Our technical evaluation showed them to have analogous stratigraphy, structure, timing of trap formation, and proximity to source. Drilling found the predicted reservoir facies in both. However, only one was a commercial gas accumulation. Perplexed by these results, we selected these two prospects as our laboratory for developing a better risk-assessment technique.
Developing the AVO tool. To better understand rock properties of the target reservoir intervals in the two wells, we acquired comprehensive log suites including dipole sonic data. As illustrated in Figure 4, there are small contrasts in acoustic impedance between the gas and wet sands and encasing shales. However, Poisson’s ratio in the gas sand is significantly lower than in both the encasing shales and wet sands.

Synthetic CDP gathers were modeled using log data to predict AVO behavior (Figure 5). For small velocity variations, Shuey’s (1985) approximation of the reflection coefficient equation, as modified by Verm and Hilterman (1995), shows that near-offset reflectivity is driven by contrasts in acoustic impedance, while far-offset reflectivity is driven also by contrasts in Poisson’s ratio (see Appendix). Thus, as observed on modeled gathers, the small acoustic impedance contrast at the top of the gas reservoir results in a weak reflection at near offsets while the strongly negative Poisson’s ratio contrast results in a strong negative reflection at far offsets—a Class 2 AVO anomaly. The recognizable onset of the far-offset anomaly is at an offset equivalent to reservoir depth, about 5600 ft., or at an incident angle of around 26°. (For ease of reference, incident angles are estimated using a straight-raypath approximation.) The tops of the water sands exhibit positive reflections at near offsets that weaken with offset. The modeling study encouraged us to conduct a pilot prestack reprocessing project to test the hypothesis that Vicksburg gas fields produce Class 2 AVO anomalies.

The nonexclusive 3-D data set was acquired by Western Geophysical with a field bin size of 82.5 X 82.5 ft., far offsets of 14 800 ft., 30- to 60-fold coverage, and a Vibroseis source with a sweep of 8-80 Hz.

Reprocessing, conducted by Geophysical Development Corporation, included nonhydorhombic moveout based on an anisotropic shale model (Tsvankin and Thomsen, 1994; Hilterman et al., 1998). This technique was utilized to produce usable data at incident angles in excess of 40°, thereby facilitating observation of the targeted Class 2 AVO anomalies.

Reprocessed CDP gathers through the two test wells are shown in Figure 6 with both normal and nonhyperbolic moveout applied. The difference in AVO character between the gas and wet sands is obvious: The gas reservoir produces a distinct Class 2 AVO anomaly, and the wet sands do not. Moreover, the strong, far-offset reflectivity that characterizes the Class 2 anomaly is developed only at incident angles greater than about 23°. Most of the data at higher incident angles would be muted on a stack processed with conventional normal moveout. As evident in Figure 6, a stack that included data from incident angles of only 0-26° would exhibit strong, positive reflections at the tops of the wet sands and a weak, negative reflection at the top of the gas sand, resulting in a phase-reversal, dim-out anomaly on the stack. Dim-out anomalies are
very difficult by nature to identify, particularly in areas of low signal-to-noise or small, complexly faulted compartments that characterize much of the Vicksburg in the study area.

Figure 7 shows angle stacks through the two test wells. Angle ranges are 0-16° (near) and 26-45° (far), corresponding to offsets roughly equivalent to 0-1/2 and 1-2 times depth, respectively. These angle stacks were selected in preference to other AVO attributes as a simple tool to identify and discriminate the weak near- and strong far-offset reflections of the targeted Class 2 anomalies. As demonstrated in Figure 7, the gas reservoir is clearly anomalous on the far angle stack, and the water sand is not. These results further encouraged us to reprocess a larger portion of the 3-D survey.

![Figure 7. Near- (0-16°) and far-angle (26-45°) stacks through the two test wells exhibit a Class 2 AVO anomaly at the gas reservoir.](image)

An analysis of the large, reprocessed volume was conducted by comparing near- and far-angle stacks. The analysis generated several interesting statistics. First, about half of the approximately 100 Vicksburg gas wells in the study area with cumulative production greater than 1 billion ft³ were associated with Class 2 AVO anomalies. Second, about 65% of the approximately 70 drilled anomalies that appeared to be geologically valid targets were commercial gas accumulations. We also observed that thicker, better developed reservoirs produced the most distinctive AVO anomalies. Threshold gross reservoir thickness required to produce an anomaly was about 30-60 ft, depending on depth, and the majority of productive anomalies were at depths of 5,000-10,000 ft, although a few thinner or deeper exceptions were noted.

![Figure 8. A 100-mile² slab of the far-angle (26-45°) stack and wells with cumulative production greater than 2 billion ft³.](image)

Thus, use of the near and far angle stacks to identify prospective Class 2 AVO anomalies in the Vicksburg appeared to be a valid exploration tool and would be expected to yield a success rate of about 65%.

**Implementing the AVO tool.** Reconnaissance exploration within the reprocessed data set was conducted by visualizing anomalies in the far-angle stack using Landmark’s Earthcube software. To accomplish this, 100-mile² slabs of the far-angle stack corresponding to a target depth range of 5,000-10,000 ft. were loaded into a workstation along with productive well data (Figure 8). Opacity settings were then adjusted to highlight far-offset anomalies, resulting in a 3-D image of the subsurface in which the anomalies visually “popped out” of the data (Figure 9).

(Continued)
Known gas reservoirs were readily catalogued as productive analogues, and untested anomalies were quickly identified as prospective targets. These prospective anomalies and associated CDP gathers were further analyzed to check for correct polarity, lateral continuity, and consistency of downdip limits as well as conventional exploration evaluation, including subsurface geology and structural mapping. Several valid prospects emerged from this work.

**Figure 10** shows the first test of our new AVO tool. Subsurface control suggested that an untested anomaly at about 7000 ft. was correlative with a sand interval seen in a downdip well and associated with a gas show. As illustrated on the structure map, the AVO anomaly did not fully conform to structure and was observed to terminate along strike of a dry hole in which the sand was absent. Thus, the prospect had both stratigraphic and structural trapping components, adding an additional measure of risk as compared to a simple structural trap. There was no evidence of an anomaly on the conventional NMO stack. Although the trap style was fairly risky, the strength of the AVO anomaly gave us the confidence to drill. The discovery well encountered a 100-ft. gross interval with 72 ft. of net pay at the anomaly and produced at an initial rate of 3 million ft³ of gas per day. This discovery was technically significant because, without the AVO tool, the prospect would likely have gone unnoticed due to its stratigraphic nature.

A second example of an AVO discovery is shown in **Figures 11 and 12**. A prospective anomaly was identified along-trend with a producing reservoir in an adjacent gas field (Figure 11). Pre-AVO structural mapping efforts had not identified the prospect due to poor quality of the conventional stack in the reservoir interval. As we later learned, the poor data quality is a result of a low acoustic impedance contrast of the gas reservoir to the surrounding shales and to imaging prob-

(Continued)
lems associated with adjacent faulting. Although quality of the conventional stack was poor, the presence of the anomaly and the nearby producing analogue gave support to the prospect. The discovery well found two gas zones, explaining the multiple anomalies observed on the far-angle stack (Figure 12). The upper zone had a gross thickness of 54 ft. with 28 ft. of net pay, and the lower zone had a gross thickness of 214 ft. with 69 ft. of net pay. The well produced at an initial rate of 5.3 million ft$^3$ and the estimated ultimate recovery (EUR) of the field is 14 billion ft$^3$.

Two additional successful AVO tests are shown in Figure 13. Here, a small upthrown fault trap is associated with two Class 2 AVO anomalies. Subsurface work revealed that the anomalies were correlative to sands productive in the area. This small trap was not considered prospective in our pre-AVO exploration campaign because it was economically unattractive, with a 20% probability of success. However, using the statistical AVO success rate of 65%, the prospects were deemed economic. The shallower zone had a gross thickness of 128 ft. with 38 ft. of net pay, and the deeper zone had a gross thickness of 107 ft. with 45 ft. of net pay. Initial production rates were 4.8 million ft$^3$ and 7.4 million ft$^3$ at the shallow and deep zones, respectively. Combined EUR for the wells is 4.5 billion ft$^3$.

Figure 14 illustrates one of our unsuccessful AVO-based attempts. A Class 2 AVO anomaly was interpreted as a stratigraphically trapped gas reservoir. Although we lacked well control to validate our geologic model, we drilled the prospect on the strength of the anomaly. The wildcat found 105 ft. of clean, low-gas-saturation sand at the anomaly. This failure highlights two pitfalls of the AVO method. First, anomalies can be caused by reservoirs having either commercial or noncommercial levels of gas saturation. Second, it can be tempting to drill great-looking anomalies that do not fully satisfy criteria for conventional prospect evaluation. In hindsight, we should have placed a higher risk on this prospect because of our inability to validate the geologic model.

To date, our AVO-based exploration campaign in the Vicksburg has resulted in six commercial discoveries, including two stratigraphic traps. We also drilled two dry holes, a result of drilling Class 2 anomalies caused by reservoirs with low gas saturation. This 75% success rate is similar to the 65% predicted by statistical analysis.
and represents a dramatic improvement over the 20% we realized with conventional subsurface and structural mapping work.

Conclusions. Our initial exploration efforts in the south Texas Vicksburg were based on the assumption that a new nonexclusive 3-D survey would lead us to untested compartments in productive intervals. However, the inherent risks in this method yielded a disappointing success rate. A search for a better risk-assessment approach led to the development of an AVO tool based on a nonhyperbolic moveout processing technique. Lessons we learned in this process include:

• Know your rocks. Reservoir intervals may have anomalous rock properties that can be exploited.
• Look beyond conventional seismic techniques. There may be valuable information in a data set not evident with conventional processing and displays.
• Low gas saturation remains a pitfall of the AVO method.

Development of an AVO-based exploration tool to identify and risk prospects in a mature producing trend helped us to harvest remaining potential in a variety of ways:

• Analog fields were easily catalogued, providing a basis for evaluating prospective anomalies.
• Risk was quantified, allowing us to make better business decisions.
• Prospects were identified quickly, because anomalies "pop out" of the data when viewed with 3-D visualization software.
• Stratigraphic traps were identified that would have gone unnoticed.
• Prospects were identified in areas of poor-quality stacked data where conventional mapping had failed to delineate them.


Acknowledgments: The authors gratefully acknowledge Edge Petroleum Corporation for permission to publish this work and John Hastings for many contributions. We thank Geophysical Development Corporation for excellent work, especially Connie Van Schuyver for data processing and Kevin Chesser for petrophysical analysis. Finally, we thank Western Geophysical for permission to use excerpts from its nonexclusive 3-D seismic survey.

Appendix: Shuey’s (1985) approximation of the reflection coefficient equation, as modified by Verm and Hilterman (1995), is:

$$RC(\theta) \equiv NI \cos^2(\theta) + PR \sin^2(\theta)$$

Where $NI = \text{Normal incidence reflectivity} = (\rho_2V_2 - \rho_1V_1)/(\rho_2V_2 + \rho_1V_1)$, $PR = \text{Poisson reflectivity} = (\sigma_2 - \sigma_1)/(1 - \sigma_{avg})^2$, and $\rho$, $V$ and $\sigma$ are respectively the density, P-wave velocity and Poisson’s ratio for the lower medium (2) and the upper medium (1), and $\sigma_{avg}$ is $(\sigma_2 + \sigma_1)/2$. This two-term approximation is valid for small velocity variations.

Mark Gregg, #2883, is president and CEO of KiwiEnergy, Ltd., an independent E&P company based in Houston. He received his B.Sc. in geophysical engineering (1980) from the Colorado School of Mines and MBA (1988) from the Bauer College of Business, University of Houston. He is a past chairman of the SIPES Houston Chapter, a member of SEG, AAPG, Houston Producer’s Forum, and IPAA. He can be reached by email at markg@kiwienergy.com.

Charles T. Bukowski, Jr., #3116, is an independent geophysicist. He received his B.S. and M.S. degrees in geology from Texas A&M University. He is also a member of AAPG, SEG, and the Houston Geological Society. He can be reached by email at cbukowskijr@yahoo.com.
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The corporate world typically mandates PC workstation hardware configurations, operating systems, storage options, application software, etc., for its employees. What do independent earth scientists without corporate constraints do? Four SIPES members, all successful prospect generators, share their workstation configurations and the driving factors in their choices below. (Note: application software issues are out-of-scope of this article.)

Larry Rairden, #2924: "My log correlation and cross-section activities are almost entirely on the workstation. I can't wait 30 seconds to open a cross section containing a dozen raster logs, and once my cross section is open, I want to work it with minimal up-and-down scrolling. That's why my monitors are positioned in portrait mode (see photo). For speedy access of raster-intensive cross sections, I use two WD Velociraptor drives in RAID-0 configuration for my C drive. Benchmarks show this to be the fastest RAID setup. I can open a 30-raster cross section in three seconds. RAID-0 is not fault-tolerant, however, so frequent backups are advised."

Jim Zotkiewicz, #2204: "The majority of my prospect generation centers on producing or produced properties in South Louisiana. I frequently use SONRIS, Louisiana’s Department of Conservation interactive oil and gas website, which allows me to build or update well locations on base maps quickly via ‘cut and paste.’ My laptop serves as a 4th monitor to view production data or any web-based data while I am mapping. I find that the 3 x 20" monitors work well for me, but my wish list would be to have 24" or even 30" monitors to handle all the map and seismic windows I like to have opened at any given time.

My current system is very adequate for the smaller surveys I generally use. However, my next upgrade will be to a 64 bit system with larger monitors and at least 4 gigabytes of memory."

Bill Finley, #2167: "I also do 95% of correlations on the workstation; and this maximizes integration with the seismic data. Initially I had just the two (2) 24" monitors, but found multitasking cumbersome. I like to keep Explorer windows open with SONRIS active (24/7) to access well data, as well as Outlook for quick communications, etc. Having them in the background makes switching back and forth time consuming, and that happens a lot. In addition, most windows pop up in the middle, so if the two (2) monitors are set to single screen, these pop-ups have to be moved offset the seam to be read. To get around this, I chose to get one large monitor for project work, and set the two (2) smaller ones to vertical display as a location for the multitask environment. Their vertical setup also made text pages (pdf's, help, etc.) more screen friendly.

Unfortunately, resolution on the big monitor (1920 x 1080) took a little getting used to since it was significantly less than the smaller ones (1920 x 1200). As a consequence, I have to bump up the display scales a notch to be readable on the on-screen maps (i.e., well names to 0.2 instead of my usual 0.1). Nevertheless, the big screen gives me plenty of work room and if I decide I need a little more space, then I can expand into the side screens for displaying an extra time slice, map or line while interpreting on the main screen.

(Continued)
screen. I also found that the well data windows (as seen on the left screen in photo) are independent of the program, and can be positioned outside on the side screens so they are out of the way during mapping and correlating. I usually keep a ton of well correlation sections (raster images) open so the extra memory and speed are well worth the investment. But that doesn't mean I'm not stuffing the rafters, could be about time for an upgrade. I have separated the seismic data from the projects, keeping those files on a different partition on the Raid drives. This was originally done to reduce backup time, but it also maintains drive data integrity without increasing access time. We already had to replace hard drives, so don't forget to back-up; even the files you don't change frequently. PS. - Note the trackball mouse. I find it much more efficient, but at a minimum get a mouse with programmable buttons and use one as the escape key. Talk about one handed operation, this is really sweet.”

LaBay Exploration — Ken Huffman, #2936, Lee Prout: LaBay utilizes a network system as multiple users were required access to a large area (over 1600 square miles) of 3D data. Multiple users were simultaneously accessing the same data in a survey. To accomplish this, five (5) workstations were tied into two storage devices (Net Apps FAS 2020 and a Storevault S550) with some data on separate one terabyte hard drives. These storage devices have a combined memory of 18 (12, 6) terabytes. The devices are programmable and are able to take snapshots of the memory every hour and back up the system every night. This utility takes up about one third of the memory in each device. Our primary use of this system is for seismic interpretation onshore and in the transition zone of south Louisiana.

These members can be reached at the following email addresses:
Bill Finley — wrfinley@rozel.com
Ken Huffman — khuffman@labayexploration.com
Larry Rairden — rairden@novageoscience.com
Jim Zotkiewicz — jimzot38@zotoil.com

If you have a Technology Corner article that you would like to submit for publication in the SIPES Quarterly, please email it to Dick Cleveland at dcleveland76@gmail.com.

Workstation Comparisons

<table>
<thead>
<tr>
<th></th>
<th>Rairden</th>
<th>Zotkiewicz</th>
<th>Finley</th>
<th>LaBay-Ken</th>
<th>LaBay - Lee</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU</td>
<td>Core 17-960</td>
<td>Intel Pentium</td>
<td>8 x Intel Pentium III Xeon</td>
<td>Dell Precision 490 Quad core Xeon Proc X5365 3.0 GHz 2x4 MB L2 Cache</td>
<td>Dell Precision 5400 2X Quad core Xeon E5420 2.5 GHz 2X6 MB RAM</td>
</tr>
<tr>
<td>Memory</td>
<td>6 GB</td>
<td>2GB</td>
<td>8 GB</td>
<td>8 GB</td>
<td>8 GB</td>
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<tr>
<td>OS</td>
<td>Windows 7 Professional, 64-bit</td>
<td>Windows XP Professional 32-bit</td>
<td>Windows XP Professional, x64 Edition</td>
<td>Windows 7 Professional, 64-bit</td>
<td>Windows 7 Professional, 64-bit</td>
</tr>
<tr>
<td>C-Drive</td>
<td>2 x WD Velociraptor (RAID-0)</td>
<td>Promise 2+1 Disk Raid SCSI</td>
<td>6 x Adaptec 2820 (RAID-0) 3.68 Terabyte</td>
<td>160 GB Serial ATA</td>
<td>160 GB Serial ATA</td>
</tr>
<tr>
<td>Video card</td>
<td>2 x Nvidia GTX-260</td>
<td>Nvidia Quatro FX-4600</td>
<td>Nvidia Quatro FX 4600</td>
<td>Nvidia Quatro FX 4600</td>
<td>Nvidia Quatro FX 1700</td>
</tr>
<tr>
<td>Monitor</td>
<td>3 x 24”</td>
<td>3 x 20”</td>
<td>1 x 40” &amp; 2 x 24” for total 60” x 20”</td>
<td>2 x 30”</td>
<td>2 x 27”</td>
</tr>
</tbody>
</table>
Dear SIPES Foundation,

I was recently awarded a scholarship from the Stephen E. Collins Scholarship Fund and I wanted to express my sincere gratitude for this generous contribution. This donation means so much to me and I am humbled to be the recipient of such a prestigious award.

I am currently working towards my MS degree in Geology at the University of Kansas and plan to graduate in May 2011. The focus of my thesis is integrating carbonate sedimentology and stratigraphy with ground-penetrating radar (GPR) to develop 3-D models of the stratigraphic architecture and porosity distribution within a carbonate reservoir analog.

I presented the initial results of my research at ExxonMobil’s Fundamental Controls of Fractured Fluid Flow conference (FC²) this August in Leoben, Austria. I will also present my research at the AGU National Meeting in December and at the AAPG Annual Meeting in April 2011. In addition to presenting the results of my MS research at several meetings, I have been selected to act as a student representative on SEPM’s Web Presence Workshop (a workshop focusing on revising and revamping the Society’s webpage) this October. I enjoy being an active student member in all of these organizations and feel that attending and participating in meetings is an excellent way to meet contacts and gain experience and knowledge.

This generous scholarship from the SIPES Foundation has helped cover the cost of my research and allowed me to collect all of the data that I had hoped to. I am confident that I will be able to carry out a very interesting study for my MS research. The research that I am doing is excellent preparation for my future career in the oil industry. I am certain that without help from organizations such as the SIPES Foundation, graduate students studying geology, such as myself, would not be able to carry out nearly as many innovative and comprehensive research projects.

I hope that with the aid of this scholarship I can contribute to the geologic community through my graduate research. Thank you very much; this award is truly an honor for me.

Sincerely,

Katharine Knoph

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Dear SIPES Foundation Board of Directors,

I would like to sincerely thank you for the SIPES Foundation’s Marvolene Speed Bennett and Carleton D. Speed, Jr. Memorial Scholarship. I feel very fortunate to have received this scholarship for the fall 2010 semester. I work very hard to succeed in my studies and it is always gratifying to know that there are people who want to aid in my achievements. This scholarship was especially important to me. I am a self supported student and during the summer semester was denied a large portion of my usual financial aid amount. I had been planning for a study abroad trip to Brazil and Argentina during the summer, however was unable to find enough funding to allow for my expenses. With your contribution through the SIPES Foundation Scholarship, I was able to help finance my trip, which was truly a once in a life time opportunity.

I am so honored to receive an Endowed Fund named from such an important individual to this society. It was very interesting to read that Mr. Speed, Jr. was from Corsicana, Texas. I actually graduated high school from a small town about 10 minutes away from Corsicana. It is amazing that his vision for providing a society for independent earth scientists has been able to grow to over 1250 members today.

Once again, I truly appreciate receiving this scholarship. Because of people like you I am able to help fund my education and work towards my goal of becoming a successful Geoscientist. It lessens my financial burden and allows for me to put more focus on my education. Without such funding I would not be as successful as I have been in this phase of my education.

Sincerely,

Janette England

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Thank you for the gracious and generous award. I especially appreciate the SIPES scholarship due to my exceeding the maximum credits to receive financial aid my senior year. Along with other scholarships and the money I made during my summer internship at Halliburton, I feel assured that I will be able to graduate. Thank you.

P.S. Thanks for the literature, I enjoyed reading it and will keep up with what is going on with SIPES!

Tom Shimura
FOR IMMEDIATE RELEASE
August 24, 2010

Contact: Diane Finstrom
Dallas, Texas
Telephone: (214) 363-1780

Dallas, Texas — The SIPES Foundation, administering the scientific, educational and charitable programs of the Society of Independent Professional Earth Scientists, is very pleased to announce that ten outstanding earth science students have been selected to receive scholarship awards this year, the highest number presented in the foundation’s history. Applications were accepted from upper-division or graduate students who were U.S. Citizens studying any field of earth science or engineering, and who had a cumulative grade point average of 3.5 or higher.

Receiving $2,000 awards from the Marvolene Speed Bennett and Carleton D. Speed, Jr. Endowed Fund; the Stephen E. Collins Scholarship Fund; and the Edward A. McCullough Endowed Fund are Janette E. England, a master's degree student in geology at Stephen F. Austin State University; Tom H. Shimura, an undergraduate student in petroleum engineering at New Mexico Tech University; and Katharine M. Knoph, a graduate student in geology at the University of Kansas. A $2,000 award, funded by donations from the SIPES Houston Chapter, was presented to Alexandra E. Kirshner, a doctoral candidate in sedimentology at Rice University. A $1,500 award, funded by an individual petroleum engineer and SIPES Member, was presented to Racha Boukadi, a master's degree student in petroleum engineering at the University of Louisiana at Lafayette.

$1,250 scholarship awards were presented to Christopher D. Althoff, a master's degree student in geology at the University of Oklahoma; Alexandra K. Breeding, an undergraduate student in geology at Texas A&M University - Kingsville; Katie M. Hulsey, a master's degree student in geology at the University of Oklahoma; Sean Kerrin, a master's degree student in geology at Louisiana State University; and Andrea Nolting; an undergraduate student in geological engineering at Colorado School of Mines.

Since its establishment in 1981, the SIPES Foundation has awarded scholarships to more than 180 promising earth science students. Funding for the 2010 awards was made available through donations from SIPES members; a bequest from the estate of Marvolene Speed Bennett, widow of the society's founding member, Carleton D. Speed, Jr.; the Stephen E. Collins Scholarship Fund; the Edward A. McCullough Endowed Fund; and the SIPES Houston Chapter. The SIPES Foundation also conducts and films educational seminars, contributes funding to earth science publications and continuing education programs, and also maintains an extensive library of earth science films.

The Society of Independent Professional Earth Scientists is a national organization of more than 1250 self-employed geologists, geophysicists and engineers engaged primarily in domestic energy exploration and development. SIPES has eleven chapters located in oil and gas centers of the United States.

# # #
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(Continued)
The SIPES Foundation gratefully accepts all donations and acknowledges these contributions with a letter. Due to limited space in the newsletter, we are unable to list gifts under $50.
SIPES Vision Statement

To be the pre-eminent organization for furthering the professional and business interests of independent practitioners of the earth sciences. In achieving this vision, emphasis will be placed on (1) professional competence, (2) professional business ethics, and (3) presenting a favorable, credible and effective image of the Society.

Adopted by the SIPES Board of Directors
September 21, 1996