

JANUARY 2005

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
30	31					1 Happy New Year!
2	3	4	5	6 GSH Board	7	8
9	10	11 Rock Physics SIG	12	13 DISC	14	15
16	17 GSH Auxiliary Tech Luncheon	18	19	20 Joint SPEE-SIPES Luncheon Potential Fields SIG	21	22
23	24	25	26 Tech Breakfast	27	28	29
30	31					

The Geophysical Society of Houston Newsletter (ISSN 1082-0817) is published monthly except for June and July by the Geophysical Society of Houston, 10575 Katy Freeway, Suite 290, Houston, TX 77024. Subscription to this publication is included in the membership dues of \$25 annually. Periodicals postage paid in Houston, Texas.

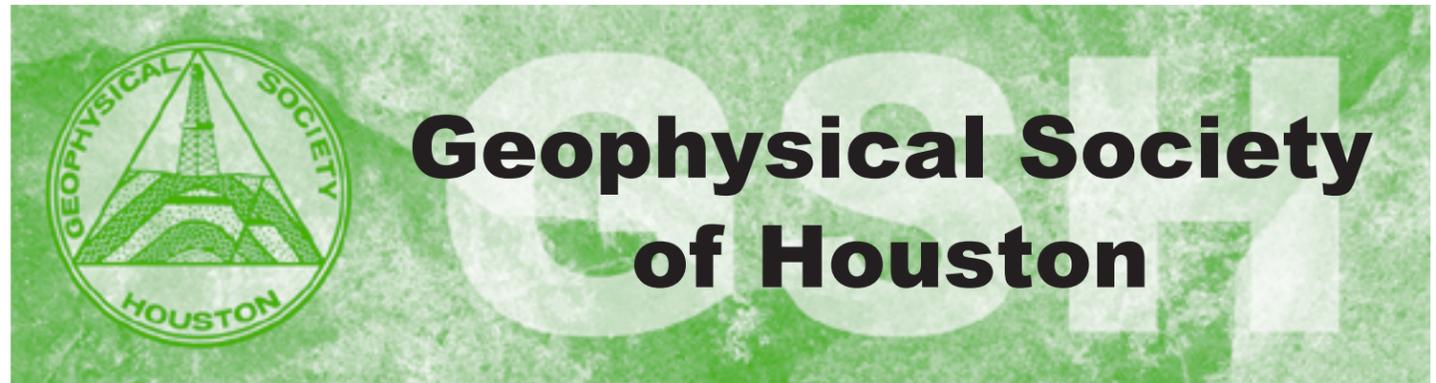
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VOL. 39, NO. 5

NEWSLETTER

January 2005

Technical Luncheon

Date: Tuesday, January 18, 2005
Time: 11:30 AM
Location: Westchase Hilton
 9999 Westheimer
 Houston, TX 77042
 (just inside Beltway 8)
Cost: \$22 w/reservation
 \$27 at the door
Reservations: GSH 713/463-9477
 Email: Joan@hgs.org
 (reservations are encouraged)

Title: New Gulf of Mexico Shelf
 Stratigraphic and Structural
 Interpretation From
 Spectral Imaging

Speakers: Adam Gersztenkorn
 Fairfield Industry
 Barbara Radovich
 Consultant

Abstract:

A new attribute called SPICE (SPectral Imaging of Correlative Events) is introduced that calculates a bed-form boundary framework from seismic data and highlights detail from subtle changes in the seismic wavelet. The concept of spectral imaging is presented in the context of a well-log model and the relationship of SPICE to impedance layering. Further validation of the method is provided by a detailed sequence stratigraphic analysis using well logs and seismic data from the Northern Gulf of Mexico.

SPICE is based on wavelet transform decomposition and singularity analysis of migrated seismic data. SPICE uses the localization properties of the wavelet transform in time and frequency to

Technical Luncheon continued on page 9.

Technical Breakfast

Date: Wednesday, January 26, 2005
Time: 7:00 am, Breakfast, no food
 allowed in the Visionarium
 7:30 am, Presentation
 in Visionarium
Location: Paradigm
 820 Gessner, Suite 400
 Houston, TX 77024

Web Site: www.paradigmgeo.com

Directions:

From the Katy Freeway — Exit Gessner and proceed south across Kingsride Ln. and Barryknoll. Turn left into parking garage and park on Level "F". Follow covered walkway to Two Memorial City Plaza, marked "Paradigm".

Reservations:

GSH 713-463-9477
 Email: Joan@hgs.org
Reservations are recommended (not required but affects Paradigm's breakfast order).

For further information, please contact Scott Wallace at 713-917-6783 or email wallace@dawson3d.com

Title: We Need to Listen to the Earth

Speaker: Tom Fulton, Seismic Solution

Abstract:

Exploitation of the Barnett Fm. in the Ft. Worth Basin entails improved imaging of the sub-surface, particularly in the zone of production. Gravity assists in imaging the overthrust sheets. In this area, conventional

Technical Breakfast continued on page 15.

President's Column

Support GSH Activities
 by Paul Schatz, Secretary

Advances in computer hardware and software have made geophysical processing, interpretation, and modeling more efficient. Unfortunately, these efficiencies have not been translated into more time for thinking and learning, interacting with our friends or enjoying life. We have an ever-increasing number of things to do, projects to complete, deadlines to meet, and voicemails and emails to return.

As the industry continues to reorganize, companies are forced to do more work with less manpower. We find ourselves under pressure to work long hours at the office, take work home, and reduce the time spent reading journals, newsletters, and attending technical meetings. Most of us work hard to maintain a precarious balance as we go through the day - juggling all the activities that make demands on our time.

Which is why it is so important to make time for the GSH.

Technical breakfasts, luncheons, workshops and short courses all provide exposure to a wide array of technical advances throughout the geoscience profession. While many companies have reduced resources for

President's Column continued on page 13.

**DISC on
January 13th!!!**

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Golf Tournament	George Lauhoff	281/275-7623	281/275-7550	glauhoff@fairfield.com
Salt Water Tournament	Bobby Perez	281/240-1234	281/240-4997	r_perez@seismicventures.com
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JOINT SPEE - SIPES LUNCHEON

Date: Thursday, January 20, 2005

Time: Social 11:15 a.m. Lunch 11:45 a.m.

Location: Petroleum Club
800 Bell (downtown Houston)

Cost: \$30 for members and affiliates pre-registered by 12 noon
(No-shows will be billed) \$35 for non-members, guests, and walk-ups.

Reservations: Telephone (713-651-1639), fax (713-951-9659),
web-site (www.sipes-houston.org), or e-mail (bkspee@aol.com)
to B. K. Starbuck-Buongiorno by 12 noon Tuesday January 18th

Topic: *Burgos Basin Update*

Speaker: *Lynne Goodoff and Gene Wiggins, The Scotia Group, Inc.*

Abstract:

South Texas is geologically and geographically contiguous with the Burgos Basin in northeastern Mexico and because of its maturity of hydrocarbon exploration and development, offers a unique opportunity for providing insight into the future potential of the Burgos Basin. In the simplest comparison, significantly more wells had been drilled in Texas than in the Burgos basin through late 2002, with over 83,000 wells in RRD4, some 28 times more than the 2,900 wells drilled in the Burgos basin. Similarly, there were 9,299 producing wells in RRD4 at the time, compared with 800 in the Burgos basin.

Although the Burgos Basin is often perceived as an extension of South Texas, there is a great diversity of fault styles, structures, and associated tectonic events. Structural features across the Burgos Basin are not uniform, but complex. Interpretation of 2D and 3D seismic data, on both regional and field development scales, has revealed faults and structures that result not only from extensional forces, but also from compressional or transverse forces.

This presentation will give an overview of many of the structural styles observed in the Burgos Basin. A common perception that structuring in Burgos is similar to South Texas may limit a more complete understanding of the basin's true potential. In addition, structural trends extend to the Rio Grand and may easily cross into the United States.

In addition to the above, an update of developments in the oil and gas sector of Mexico will be presented.

Biography:

Lynne Goodoff is Principal Geophysicist with The Scotia Group, Inc. in Houston and has over 25 years experience. She was associated with Exxon as an exploration and production geophysicist and with Pennzoil as geophysical advisor before joining Scotia. Her responsibilities have included 2D and 3D interpretation, prospect mapping, new venture assessment, and field development studies in South Texas and the Burgos Basin. She has worked extensively on the Gulf of Mexico and internationally.

Gene B. Wiggins III is Executive Vice President for Scotia. He has over 27 years of experience in the upstream oil and gas business as a consultant and in business development capacities for several companies. His primary focus has been on all phases of the evaluation of oil and gas properties with emphasis on reserves determination, production forecasts, well performance, economics and market valuation. He has an MBA degree from Tulane University and a BS degree in mechanical engineering from the University of Houston. Mr. Wiggins was SPEE National President in 1998.

The Scotia Group, Inc. is a full service international oil and gas advisory firm which specializes in reservoir studies and simulation, exploration analysis, strategic planning and risk analysis, reserves analysis and property valuation, acquisition valuation, opinion reports, and research and technology applications.

Technical Breakfast continued from page 1.

3-D data and fracture mapping are relatively expensive. On the other hand, there are techniques that allow the driller to look ahead of the bit. One may either use conventional sources on the drill string or use the bit as a seismic source. For the Barnett Fm., the look-ahead drilling gives the operator a 3-D image at the very time he needs it most. Further, near surface geophones may be used to map induced fractures as well as monitor production. Near-

surface geophone arrays allow for cheaper mapping of the fractures and for monitoring production, and allay fears of environmental damage. Mapping fractures from the near surface rather than at nearby wells is both cheaper and simpler in terms of equipment needed.

Biography

Tom Fulton has BS & MS in Physics from UNT and over 50 years in the exploration industry

including 38 in R & D with Amoco, Gulf and Chevron. He was elected president of geophysical societies in New Orleans and Houston. His dba is Seismic Solutions where he consults in the areas of seismic data acquisition, processing, and management. He also chairs the museum committee of the Geophysical Society of Houston. He is a member of SEG, GSH, EAGE and served on the SEG Standards and Offshore Technology Program Committees for many years.

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Editor's Note

To insure your information reaches the GSH society members in a timely manner it must appear in the appropriate newsletter issue. Please note the following deadlines and plan your function's publicity strategy accordingly. Items must be received on or before the corresponding deadline date. Materials can be sent to John Sumner at sumnergeo@earthlink.net with a copy sent to Fernanda Araujo at fernanda.v.araujo@exxonmobil.com. If you have any questions please call John Sumner at 713/666-7655 or Fernanda Araujo at 713/431-6126.

2005 GSH Newsletter Deadlines

Issue February 2005
Deadline.....January 11, 2004

Issue March 2005
Deadline..... February 8, 2005

Announcements

Rock Physics SIG

January 11, 2005

DISC

January 13, 2005

GSH Luncheon

January 18, 2005

Potential Fields SIG

January 20, 2005

SIPES Luncheon

January 20, 2005

Auxiliary

The Geophysical Auxiliary of Houston Welcomes the New Year!

The GAH wishes you a very Happy New Year and hopes your holidays were joyful and that you were able to spend time with friends and family. On December 16th we found several of our members joining the Geological Auxiliary for a delicious luncheon at the lovely Lakeside Country Club. Entertainment was provided by "The Ivory Touch" and a wonderful time was had by all that were able to attend.

Please come join us, and celebrate the New Year on January 18th at the scenic Houston Racquet Club for our Winter Luncheon and Fashion Show. The luncheon menu has been planned to include the classic HRC salad, Chicken Gismonda and a delicious apple strudel with vanilla sauce. Fashions will be provided by Chico's and modeled by our own GAH members. This will be a terrific opportunity to get back together with friends and share those holiday moments. The luncheon begins at 11:00 am with a social hour followed by lunch and the fashion show. The Houston Racquet Club is located at 10709 Memorial Drive and valet parking is available. Contact Chairperson, Kathi Hilterman at 713-467-2599 for luncheon costs and more information.

The Geophysical Auxiliary annual Spring Brunch will be held on Sunday, March 13 at Lakeside Country Club. Members, spouses and guests will enjoy the lovely surroundings, an elegant buffet and be entertained by a group from the Country Playhouse performing from "Compleat Works...Shakespeare". You don't need to know anything about Shakespeare to enjoy this irreverent fast-paced romp through his plays. Please contact Chairperson Georgeann Massell at 281-353-7894 for more information.

Our Spring Event, scheduled for Wednesday April 20th, will be a trip to Martha's Bloomers in Navasota, Texas. We will be treated to a presentation on plants and herbs from this well-known nursery, followed by a luncheon in the Café M Bloomers. This will be a fantastic opportunity to shop and prepare for your spring gardens.

The Geophysical Auxiliary of Houston invites the wife of any present or past member of the GSH or SEG, the widows of former members of the GSH and SEG, and women members of these organizations to join us and become a member for 2005. Our Membership Chairperson, Kathi Hilterman, wants to hear from you! We are busy planning events for your enjoyment and yearly dues are only \$15.00. We are looking forward to a great year and would welcome you to join us. Call now and don't miss out! Call Kathi at 713-467-2599 or GSH Liaison, Luann Cefola at 281-759-7338 for a membership application and information on how to join.

GSH Advertising Rates

No. of Issues:	1/8 pg.	1/4 pg.	1/2 pg.	full page
1	\$125	\$200	\$400	\$750
2	\$208	\$335	\$660	\$1250
3	\$278	\$448	\$880	\$1670
4	\$348	\$560	\$1100	\$2090
5	\$425	\$680	\$1360	\$2515
6	\$490	\$782	\$1565	\$2935
7	\$560	\$895	\$1790	\$3355
8	\$630	\$1008	\$2016	\$3780
9	\$700	\$1120	\$2240	\$4200
10	\$735	\$1175	\$2350	\$4400



To reserve your advertisement space or for more information contact Lilly Hargrave at: 713/463-9477 or email: lilly@gshtx.org.

Distinguished Instructor Short Course



The Distinguished Instructor Short Course (DISC) is an eight-hour, one-day short course on a topic of current and wide-spread interest. Sponsored by both the SEG and EAGE, it is presented at over 20 locations each year around the world. Established in 1998, the DISC has attracted almost 10,000 participants in its four year history.

Petroleum Systems of Deep-Water Settings

by Paul Weimer, University of Colorado

Thursday, January 13, 2005

Hilton Americas Houston
1600 Lamar
Houston, TX 77010

DEADLINE: Register Now!
 Student Members \$25
 SEG/GSH Members \$130
Contact: GSH at 713-463-9477
 email joan@gshtx.org

Summary

The course will start with an overview of the geology of deep-water systems, past, present and future. This review will cover the recent trends in deep-water in terms of drilling results, and introduce the elements of petroleum systems-reservoirs, traps, seals, source rock, migration, and timing.

The key characteristics of the key reservoir elements in turbidite systems are: a) sheet sands (layered and amalgamated), b) channel fill, c) thin beds (overbank), and (d) slides and debris flows. The seismic stratigraphic expression of these systems is present in 2D, shallow 3D, and depth 3D, and integrated with the wireline log expression and information from outcrops, cores, and biostratigraphy. Examples from several producing basins around the world illustrate these points. The production history and the reservoir challenges in developing each of these fields is discussed.

Participants are introduced to the basic occurrences of turbidite systems in a sequence stratigraphic framework. Examples show how to modify the basic model for each kind of basin setting (structural setting, faults, and salt), high frequency sequences, sediment delivery systems, and the effects of grain sizes on turbidite systems. Carbonate and lacustrine systems are also discussed.

Many different kinds of basins produce from turbidite systems. A review of these basins shows the different tectonic settings and associated structural styles. The review also demonstrates that most reservoirs are pure stratigraphic traps or combined traps. A review of seals, source rocks and modeling principles gives the geophysicist practical techniques for understanding deep-water systems.

The course concludes with a summary of what is important in the exploration for and development of deep-water systems. The application of these techniques to each geophysicist's current projects is key, as is the difference between frontier exploration and exploration in mature basins with deeper

potential. Examples from 3 or 4 basins distributed globally illustrate the principles. These examples will also demonstrate that there is deep-water potential in most basins globally.

Biography Paul Weimer

Paul Weimer has been a professor at the University of Colorado at Boulder since 1990. He holds the Bruce D. Benson Endowed Chair in Geological Sciences, and serves as Director of the Energy and Minerals Applied Research Center. His research has focused primarily on the petroleum systems of deep-water continental margins.



Dr. Weimer has published more than 100 papers on a variety of topics: sequence stratigraphy, biostratigraphy, reservoir geology, petroleum systems, 3-D seismic interpretation, structural geology and tectonics. In 1998, a special edition of the AAPG Bulletin was dedicated to the research done at the University of Colorado by Dr. Weimer and colleagues on the petroleum geology of the northern deep Gulf of Mexico.

Dr. Weimer has also co-edited eight books, focusing on petroleum systems of deep-water, sequence stratigraphy, 3D seismic interpretation, and North Alaska Geology. He is currently writing a book for AAPG on the petroleum geology of deep-water deposits.

Dr. Weimer served as an AAPG Distinguished Lecturer in 1998-1999, and was the Esso Australia Distinguished Lecturer in 2001. He received his BA with Honors in Geology from Pomona College in 1978, and his MS degree from the University of Colorado in 1980. He worked as an exploration geoscientist for Sohio Petroleum (later BP) in San Francisco, CA, from 1980-1984. He received his PhD in 1989 from The University of Texas at Austin. He worked with Mobil Oil in Dallas, TX, from 1988-1990 as a research and exploration geoscientist.

Web Notes

by Dave Crane, Webmaster



In December, the Website installed release 4.1 of the Tendenci™ software from Schipul Technologies. One of the new features is a “syndicated calendar.” Any website that uses Schipul’s software can classify selected events as “syndicated” and then create a list of future events from their choice of participating societies. The GSH and

the Gulf Coast Section of the SPE have chosen to include all three local societies that use Tendenci(tm). They can be found at gshtx.org and spegcs.org, respectively.

In addition, Ed Schipul has offered to make his syndicated calendar available to the Houston Engineering Council and he will add the capability

to manually include events from societies that do not use Tendenci(tm). The current HEC calendar is completely manual and doesn’t always get updated in a timely fashion.

Most of these new features were paid for by one or more of Schipul’s clients and made available to all other clients at no charge.

President’s Column continued from page 1.

professional training and personal development, GSH activities serve as first-rate opportunities for learning new techniques, interacting with colleagues, and having a good time. Nowhere else will you find such a rich source of continuing education and networking, all of which are offered at a bargain prices (many events are free or very low cost).

In order to remain effective in today’s environment, it is necessary to be familiar with many fields outside one’s main area of focus. A mission of the GSH is to provide professional development for practicing geophysicists and other geoscience professionals. If you haven’t been to a technical breakfast, luncheon, or SIG meeting - do it! do it now! Encourage your colleagues to sign up as well. Rarely will you have an opportunity to interact so closely with industry-recognized experts. The more participation we have, the better the events will be. It’s a win-win situation where everyone benefits.

Registration for GSH events and short courses has never been easier. Point your browser to www.gshtx.org, click on Activities & Events, then select the Events Calendar or Events List. From either display, you can review activities a month at a time and register for the ones you want.

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SEG/EAGE DISTINGUISHED INSTRUCTOR SHORT COURSE

Petroleum Systems of Deepwater Settings

By Dr. Paul Weimer

Thursday January 13, 2005
Hilton Americas Houston
1600 Lamar, Houston, Texas 77010

Presentation: 8:00am - 4:30pm
Registration opens at 7:00am
Breakfast at 7:15 am; Lunch at 12:00 noon

DEADLINE: Thursday December 16, 2004

Registration is limited to the first 400 (Register early!!!)

Important: Please complete a separate form for each registrant

Name: _____

Company Name: _____

Street Address: _____

City, State, Zip: _____ Country: _____

Phone: _____ Fax: _____ Email: _____

SEG Member? Yes No Geophysical Society of Houston Member? Yes No

Cost: **(Check ONE)**

- Member of SEG and GSH - includes breakfast, lunch and course manual \$130
As a courtesy we will accept members of HGS or members of other SEG sections as if GSH member.
- SEG student member (include member number or completed application) \$25
SEG Student membership dues provided for by Halliburton Energy Services, Inc.
- Member of SEG but not GSH — \$25 will be applied toward GSH membership \$155
- Member of GSH but not SEG — \$70 will apply toward SEG Associate Membership \$200
- Member of neither GSH nor SEG - Please complete both applications \$225

**If you have paid the non-GSH member DISC rate, a GSH membership form will be available for you to complete at registration.*

**If you have paid the non-SEG member DISC rate, SEG will mail you a paid membership application.*

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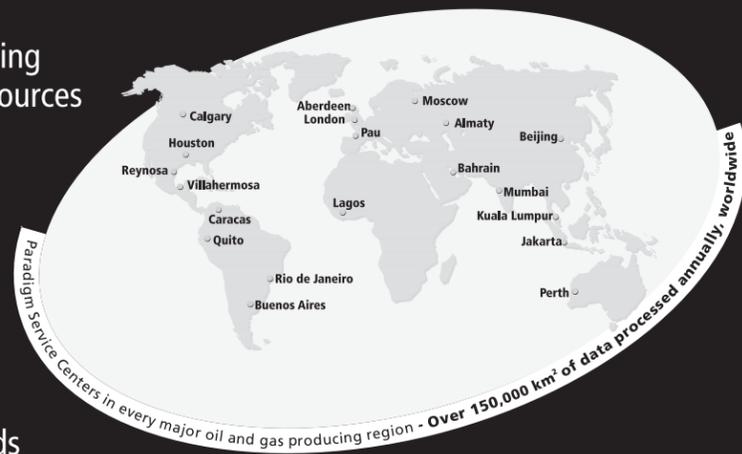
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Membership Report

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ExxonMobil

Javaid Durrani,
Consultant

Tin Lane, BP

Rachel Masters, Fugro

Greg Raskin, ChevronTexaco

Robert L. Rosenblatt,
Shell Exploration

Allan J. Sander, Veritas Land

Paul Valasek, ConocoPhillips

Associate

Michael J. Christiansen,
GX Technology

Nigel J. Forcer,
PGS Marine Geophysical

Ian Gordon, ConocoPhillips

Cole Harris, Exagen Diagnostics, Inc.

Greg V. Hess, Kelman Technologies

Mike McKinney, Unit Petroleum Co.

Active	1011
Associate	324
Comp	21
Emeritis	60
Honorary	30
Life	32
Student	10

Total **1488**

(Includes today's new members)

Happy New Year
2005

Sightings



Some scenes from the Technical Luncheon...



and the Rock Physics SIG...



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SPECIAL INTEREST GROUPS

POTENTIAL FIELDS GROUP

Potential Fields Dinner

Date: Thursday, January 20, 2005
Time: 5:30 PM
Location: HESS Building, 5430 Westheimer, Houston
Cost: \$25.00
Reservations: Call or email Dale Bird, by noon Tuesday, January 18, 2005
281-463-3816 or dale@birdgeo.com

Title: **Gravity and Magnetic Studies of the Southern Rocky Mountain Crust: Basins to Basement**

Speaker: G. Randy Keller, Department of Geological Sciences, University of Texas at El Paso



Abstract:

The Rocky Mountains have intrigued researchers and explorationists ever since the gold rush days. These mountains are a tectonic puzzle because of their complex history and their distance from plate margins that usually make driving mechanisms evident. From a petroleum exploration point of view, the formation of the Ancestral Rocky Mountains, the Laramide orogeny, and late Cenozoic extension and uplift are of primary interest.

There has been an increasing emphasis on gravity and magnetic data in studies of this region, and these data have been particularly effective when used in an integrated fashion with seismic and drilling data.

Rifting during the late Precambrian (Ediacaran) and Cambrian affected large areas of the southwest and created sedimentary basins that have in many cases survived to the present. In at least some cases, these strata contain both source and reservoir rocks. Thus, there is a frontier defined by stratigraphic depth. In addition, younger structures such as those associated with the ancestral Rocky Mountains have often been affected by older rift structures that preserve Cambrian and older strata.

Gravity and magnetic data have played a major role in studies that reveal the deep manifestation of ancestral Rocky Mountain structures including the deep basin structure and anomalous structure of the up-

lifts. These data show that the scale of these structures is impressive in a global context. The structures extending across Oklahoma and the Texas panhandle into New Mexico have been referred to as the Southern Oklahoma or Wichita aulacogen, which can be interpreted to extend along this trend as far northwest as the Uncomphagre uplift in Utah. The deformation that formed the ancestral Rocky Mountains is a massive inversion of these rift structures and is due to a plate collision in the late Paleozoic. These structures form one of North America's major petroleum provinces. The Laramide orogeny also produced considerable crustal scale deformation in the form of large basement uplifts and deep productive basins. Finally, late Cenozoic uplift and extension formed a series of basins that gravity and magnetic data show are deep and complex.

Biography:

G. Randy Keller holds the L. A. Nelson Professorship in the Department of Geological Sciences at the University of Texas at El Paso. He is also Chief Scientist and Co-Principal Investigator at UTEP's large NASA Earth Science research center.

His research interests stress the geological applications of geophysics and span a variety of techniques at a variety of scales. He has conducted many studies of the structure and evolution of the lithosphere

using gravity, magnetic, and seismological measurements integrated with geological data. He has also regularly used geophysical methods to study issues such as ground water resources, earthquake hazards, and site characterization. He has been very involved in the Geoinformatics initiative and is interested in the development of databases, techniques that foster data integration, software tools, and web services.

In addition, he has helped organize numerous large cooperative research efforts and has regularly received funding from sources that include NSF, NASA, Department of Energy, U. S. Geological Survey, Department of Defense, and industry.

Dr. Keller has published over 200 scientific papers, reports and book chapters as well as many maps. He also has directed 22 doctoral dissertations, 62 master's theses, and has mentored and advised many undergraduate students.

He is a long-time member of the GSA, AGU, SEG, AAPG, RAS and EGU and has served numerous governmental agencies, professional societies and scientific bodies as an officer and committee member. In addition to his research interests he is particularly concerned with issues such as involving information technology and data sharing, diversity, science education, and professional development of students and those already in the work force.

SPECIAL INTEREST GROUPS

ROCK PHYSICS SIG

Date: Tuesday, January 11, 2005
Time: 5:30 p.m.
Location: Visualization Center
Veritas DGC, Inc. • 10300 Town Park Dr. • Houston, TX 77072
Contacts: Keith Katahara (keith@spinexp.com)
Tad Smith (tad_smith@veritasdgc.com)
Title: **Rock Type Identification in a Complex Carbonate Reservoir: an Example Case**
Speaker: **Arthur Cheng**

Abstract:

Systematic use of a new pore structure description technique (PSI) leads to improved rock type classification that can be fundamentally different from standard rock type schemes using permeability, porosity, and capillary pressure alone. Owing to the broad-based petrophysical data-driven nature of the PSI approach, any PSI classification system automatically inherits direct ties to a wide range of petro-physical properties, and thus satisfies requirements of linking the

classification scheme to static and dynamic reservoir properties, as well as to the geophysically measurable properties used in log-based characterization. This approach based in physical reality provides a robust foundation for predictive simulations of fluid flow and reservoir production.

Examples courtesy of New England Research, Inc.

Biography:

Arthur Cheng is a consultant in bore hole geophysics and petrophysics, and

a scientific advisor at SensorWise, Inc. He received a B.Sc. in Engineering Physics from Cornell Univ. in 1973 and a Sc.D. in Geophysics from M.I.T. in 1978. From 1982 to 1996 he was the Project Leader for the MIT Borehole Acoustics and Logging Consortium. In 1996 he joined Western Atlas Logging and served in a number of managerial positions. Since 2000 he has been an independent consultant.

Technical Luncheon continued from page 1.

produce a unique display that provides a boundary framework of the subsurface that is rich in structural and stratigraphic detail. This technique advances seismic interpretation closer to the goal of producing accurate geologic mapping of the subsurface. SPICE offers a straightforward way to interpret a seismic section similar to a geologist in the field who maps beds and faults directly from the outcrop.

Most seismic interpretation today is performed on variable area displays of the seismic amplitude of a wavelet that changes with depth. This has historically posed a number of significant problems for the interpreter. Reflections in seismic data are blurred representations of the actual stratigraphy. The interference of a changing pulse shape with a wide variety of impedance contrasts in the subsurface adds a significant element of uncertainty to the final mapping of reservoir, seal and trap. The richness and non-stationary character of the seismic trace require a process that localizes rapidly changing features in the spectrum. The unique SPICE calculation reduces the uncertainty in picking subtle bed-form boundaries and brings out the full extent of the resolution of the seismic amplitude data.

Biography:

Adam Gersztenkorn is a Senior Research Geophysicist in the research group at Fairfield Indus-

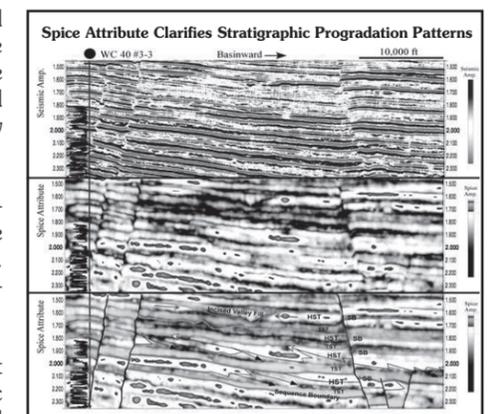
tries. He worked as a Research Scientist at the Amoco Research Center in Tulsa for approximately 18 years prior to employment at Fairfield Industries. He worked on seismic tomography, computational fluid flow and seismic attributes while at Amoco. He developed and is the patent holder for the eigenstructure coherence algorithm. For his work on the eigenstructure coherence algorithm, he received from Amoco the Chairman's Technology Award.

He holds an undergraduate degree and a M.S. degree from the University of Tulsa with most of the course work for a Ph.D. in Mathematics completed. His areas of study involved computational mathematics and geophysics.

Barbara Radovich is a consulting geophysicist with 25 years of worldwide experience in seismic and well log sequence stratigraphy in clastic and carbonate settings, fluvial to deepwater settings, and regional to reservoir scales of investigation. She is a recognized speaker on the integration of 3D seismic attributes and visualization techniques within a framework of sequence stratigraphic architectures, especially as applied to deepwater settings. Former corporate affiliations are Exxon Production Research, Pennzoil and Texaco Exploration and Upstream Technology. She holds Bachelors and de-

gree from Duke University, a Masters degree from Rice University, and a Doctorate in Geophysics from the University of Michigan.

Figure:



A Sequence stratigraphic interpretation of the SPICE section integrated with the LithFrac well log curve for West Cameron 40 #3-3. Downlap and toplap geometries characterize the highstands in this area on the SPICE section and are barely visible on the seismic amplitude display. A prominent channel cut with well-defined top and base appears at the shallow Blue sequence boundary. This channel is poorly outlined by the seismic amplitude section.