### Newsletters

**Vol. 40, No. 7**

**MARCH 2006**

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**Candidates For Offices**

- Geophysical Auxiliary
- Candidates for Office
- Rock Physics SIG
- Data Processing SIG
- Potential Fields SIG
- Multi-Component Seismic SIG

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**Technical Luncheon**

- **Date:** March 21, 2006
- **Time:** 11:30 a.m.
- **Location:** Westchase Hilton 9999 Westheimer, Houston 77042 (just inside Beltway) • 713-974-1000
- **Cost:** $25 with reservation • $30 at the door
- **Reservations:** Online at www.gshtx.org
- **Email:** office@gshtx.org • GSH 713-463-9477
- **Title:** Case Study: SAGD Steam Flood Project Using Simultaneous Inversion of Pre-Stack Seismic Data
- **Speaker:** Arcangelo Sena, PhD., Veritas DGC, Inc.

**Abstract:**

We will review a case history illustrating the workflow and technologies applied for a SAGD steam flood project using a new approach to the simultaneous inversion of pre-stack seismic data, which produces estimates of P-impedance, S-Impedance and density. The objective was to delineate sand/shale distributions using seismic and well data for better placement of SAGD wells. The second phase of this workflow was to build facies based porosity, permeability and water saturation models, constrained by seismic and well data, for reservoir simulation. We show that the seismically derived shale volume from pre-stack simultaneous inversion and multiattribute analysis is a key parameter in building high-resolution reservoir property models for simulation and optimal well location.

**Biography:**

Dr. Sena is Director of Technology and Business Development for Reservoir Operations in Houston for Veritas DGC. Before assuming his current role, Arcangelo was Manager of the Veritas AVO/Attribute Analysis Group. Prior to joining Veritas, Arcangelo was a Principal Geophysicist with ARCO and a Lecturer in the Department of Natural Sciences and Mathematics at the University of Texas at Dallas. He holds a Ph.D. in Geophysics from the Massachusetts Institute of Technology (MIT) and is a member of the SEU, EAGE, AGU and Sigma Xi Research Society (MIT Chapter). He was the recipient of the 1998 ARCO Outstanding Technical Achievement Award, the Honorable Mention Best Paper at the SEG 1999 Convention and is author of US Patent on AVO analysis. His main interests include AVO analysis, reservoir characterization, seismic inversion, seismic anisotropy, multi-component seismology and rock properties.

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**Inside This Issue**

- Geophysical Auxiliary
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- Data Processing SIG
- Potential Fields SIG
- Multi-Component Seismic SIG
- SEG DISC
- Saltwater Tournament
- Event Scenes
- Golf Tournament
- Membership Report
- Calendar of Events

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**President's Column**

By Scott Singleton, GSH Treasurer

**STATE OF THE SOCIETY**

Part 2 of 2:

Financial Summary, Fiscal Year 2004

GSH is evolving as a society. In the new century, three items have acted to completely change the way it does business and the way the world sees it:

* An office (established at the present location in 2001)
* A website (begun in 2003)
* The usage of credit cards (~60% in FY04, currently running almost 100% in FY05)

Quite obviously, having an office with a paid office staff enables the Society to have an official presence in the world and a central location for all business activity. Most businesses consider this a necessary first step. Having a website adds another dimension to the way in which the world sees the Society. It’s interesting that this portal to our existence is rapidly becoming as important (or, for some businesses, even more important) than having an office. And the final evolutionary step is conducting business via the website using credit cards. I believe our society has passed through each of these thresholds.

As they say, change is good. While this maxim may generally be true, it usually does not translate into a free ticket. In fact, it seems as

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**President’s Column continued on page 4.**

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**MARCH 2006 Calendar**

- Ash Wednesday
- GSH Tech Luncheon
- Rock Physics SIG
- Data Processing SIG
- Potential Fields SIG
- SIPES Luncheon
- Vernal Equinox
- GSH Luncheon
- Case Study: SAGD Steam Flood Project Using Simultaneous Inversion of Pre-Stack Seismic Data

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**Geophysical Society**

of Houston

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HOUSTON, TX 77034

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**Periodicals**

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Houston, Texas
John Ferguson has been a member of The University of Texas at Dallas Geosciences faculty since 1982 and is currently the Department Chairman. He was awarded a PhD degree in geophysics from Southern Methodist University and previously obtained an MS in geophysics from the University of North Carolina and a BS in physics from Wofford College. He was a founder of the SAGE Geophysical Field Course, which won the American Geophysical Union’s Excellence in Geophysical Education Award in 1999 and has now been taught for 23 consecutive years. Research interests span seismology, potential fields, mathematical geology, signal processing and numerical modeling. In addition to projects involving 4-D micro-gravity in Alaska and New Mexico, Dr. Ferguson is active in the application of near surface geophysics and high-resolution seismic methods to archaeology.

### Biography

John Ferguson has been a member of The University of Texas at Dallas Geosciences faculty since 1982 and is currently the Department Chairman. He was awarded a PhD degree in geophysics from Southern Methodist University and previously obtained an MS in geophysics from the University of North Carolina and a BS in physics from Wofford College. He was a founder of the SAGE Geophysical Field Course, which won the American Geophysical Union’s Excellence in Geophysical Education Award in 1999 and has now been taught for 23 consecutive years. Research interests span seismology, potential fields, mathematical geology, signal processing and numerical modeling. In addition to projects involving 4-D micro-gravity in Alaska and New Mexico, Dr. Ferguson is active in the application of near surface geophysics and high-resolution seismic methods to archaeology.

### High Data Quality in the Gulf

Combined Marine Gravity and Magnetic Covariogram

<table>
<thead>
<tr>
<th>Scott Messman</th>
<th><a href="mailto:smessman@ecdon.com">smessman@ecdon.com</a></th>
<th>Gravity and Magnetic Data Available</th>
<th>303.980.6556</th>
</tr>
</thead>
</table>

Potential Fields SGI continued from page 11.

UTD became involved in a theoretical investigation of the possibility of gravity surveillance. An inversion procedure was formulated and tested on synthetic gravity data based on reservoir simulations. Various 4-D gravity noise scenarios were proposed and the resolution of the method determined. At about the same time (1994), a program of field experiments was initiated to refine procedures for actually obtaining the type of data required for the modeling. It soon became clear that the state of the art would require some extension in order to achieve that goal.

In successive field experiments, conducted in the Arctic winter, micro-gravity measurement techniques (both relative and absolute gravity meters) and geodetic measurements using the Global Positioning System were refined. The noise levels to be expected in the 4-D gravity data were characterized and a long-term monitoring program was planned, involving about 300 stations. In 2002 a full-scale baseline survey was conducted in late in that year water injection commenced. Repeat surveys were conducted in 2003 and 2005, and a third survey is planned for this year.

The 4-D data over the 2002 to 2005 interval has been modeled and the flood water has been detected. Model results resemble predictions from reservoir simulations, but are also producing results that should help the reservoir engineers understand the actual situation in the field. The methodologies and standards developed for this project are now being used to plan surveys in other areas.

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Editor’s Note

To ensure 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. Please send any obituary or memorial articles of recently deceased members to the Editor for inclusion in the newsletter. Materials can be emailed to John Sumner at sumnergeo@earthlink.com with a copy sent to Fernanda Araujo at fernanda.v.araujo@conocophillips.com, and Glenn Bear at glenn.w.bear@exxonmobil.com. If you have any questions please call John Sumner at 713/666-7655, Fernanda Araujo at 832/486-2564, or Glenn Bear at 713/431-6583.

2006 GSH Newsletter Deadlines

Issue: April 2006 Deadline: March 10, 2006
Issue: May 2006 Deadline: April 13, 2006

Auxiliary

Events Update from the Geophysical Auxiliary of Houston!

The Geophysical Auxiliary’s annual Spring Brunch is just around the corner! On Sunday, March 19th, we will join our spouses and friends at the scenic Lakeside Country Club where we will be treated to an elegant buffet and some very special entertainment. While we enjoy the camaraderie of friends, Country Playhouse Theatre Company will be putting on a special production for our enjoyment. This is always a wonderful opportunity to reconnect and take in the lovely surroundings of Lakeside. Don’t miss this exciting event! Contact our Chairperson, Lynn Schoenberger, at 713-464-5249 for reservations and additional information.

On Thursday, April 20th, the Auxiliary will be hosting a special Spring Event Wine Tasting. Auxiliary members will meet at Circle S Vineyard in Sugarland to enjoy a tour of this wine making facility, a wine tasting and lovely pasta buffet in an intimate home-style setting. This wine shop/winemaker has a lovely selection of wine related gift items as well as on-site wine sales. Seating will be limited at this event and attendees must be able to walk up a flight of stairs as there is no alternate access available. Contact Chairperson, Luann Cefola at 281-759-7338 for more details.

We will round out our year on May 17th with our Annual Business Meeting and luncheon at The Houston Racquet Club. Along with this annual business meeting there will be a special program on fashion accessorizing presented by Steinmart’s Judy Luksa. Plan on joining us so that you can finally find out “What should I wear with this outfit?”

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 of the GAH for 2005-2006. Our Membership Chairperson, Kathi Hilterman, wants to hear from you! We are busy planning many wonderful events for your enjoyment and yearly dues are only $15.00. 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.
if all changes come with a price. Our society is currently wrestling with the consequences of this evolution. Back in the good ‘ol days when a handshake sealed multimillion dollar deals, your Society had about $60,000 less in expenses (from an office, website, and credit card fees, see accompanying spreadsheet), which adds up to about a quarter of our total expenses. Life was good then, and your Society had a surplus of funds in the bank. We even started a money market account to hold much of the excess in interest-bearing but liquid investments. But it’s amazing what a few years of negative budgets can do to a surplus. As of the fall of 2005, those surplus funds had officially evaporated and the Society started drawing from its long-term mutual fund savings accounts in order to meet its financial obligations ($28,084 has been withdrawn to date). Obviously, this is not a viable solution. As a result of this situation, your Board is taking a series of steps that it hopes will result in a net zero budget in the near future. The first most obvious step is that dues and event fees will go up. Our dues and event costs are currently very moderate and affordable, and small increases shouldn’t cause any great stress to anyone. The second, a cursory glance at the financial summary spreadsheet will show that the recreational events we hold (which are very popular) need to financially support our largest outlay, the office. If they should be able to do that, we will be well on our way towards a balanced budget. The third important conclusion is that our society meetings should be self-supporting. Each meeting category should have a zero net except for the technical luncheons, which should show a healthy positive cash flow because it is our most popular meeting. With your help and support, I believe this undesirable financial situation will be but a hiccup in an otherwise steady evolution of your Society as it continues to keep pace with the ever-changing society we live in. It will require your support to do so. A good start might be a letter to the editor from any of you who might feel strongly about the material in this article or the accompanying spreadsheet included at right.

## GSH FY04 Financial Summary

<table>
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<tr>
<th>Category</th>
<th>Item</th>
<th>Income</th>
<th>Expense</th>
<th>Net</th>
<th>Notes</th>
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<td><strong>Activities</strong></td>
<td>Golf Tournament</td>
<td>74,775.00</td>
<td>63,012.00</td>
<td>11,763.00</td>
<td>includes $742 in taping income from 2004 spring event</td>
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<td>以下几个</td>
<td>7,357.00</td>
<td>6,487.00</td>
<td>6,670.00</td>
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<td></td>
<td>Shrimp Feed</td>
<td>575.00</td>
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<td></td>
<td>Sporting Clay Event</td>
<td>17,379.00</td>
<td>13,675.00</td>
<td>3,694.00</td>
<td>includes $2,550 in taping income for 2004 fall event</td>
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<td>Tennis Tournament</td>
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<td>1,410.00</td>
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<td>101,757.00</td>
<td>80,784.00</td>
<td>20,973.00</td>
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<td><strong>Meetings</strong></td>
<td>Annual Awards Banquet (+ taping)</td>
<td>4,475.00</td>
<td>10,285.00</td>
<td>5,810.00</td>
<td>includes $4,200 in taping income from 2004 spring event</td>
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<td>Annual Meeting / BBQ</td>
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<td>Joint Meeting</td>
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<td>Past President’s Lunch</td>
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<td>SEG 75th Anniversary Luncheon</td>
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<td>Technical Luncheons</td>
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<td><strong>Education</strong></td>
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<td><strong>Other</strong></td>
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<td>-3 to 3%, equilibrium +4516 to $4468 on credit card charges</td>
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<td>Donations to GSH</td>
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<td>8,800 for PTYS, 4,000 for PTYS, both made in June, 2004</td>
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<td>Donations to SEG Foundation</td>
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<td>215,785.00</td>
<td>241,045.00</td>
<td>25,260.00</td>
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</table>
George Marion, Candidate for President

George Marion desires to serve our local geophysical community. He has been a member of the GSH since 1977, of the SEG since 1976, and of the HGS since 1994. In 2004-2005 he served as GSH 2nd VP, during which he assisted in the SEG 75th Anniversary event at the Houston Club.

George holds a M.Sc. in Geophysics from Georgia Institute of Technology (1976), a Sigma XI research award (1976), a B.Sc. in Physics from Mississippi State University (1974), plus License 4653 from the Texas Board of Professional Geoscientists.

Geoff was a geophysicist for Chevron Geosciences Company based out of Houston from 1977 through 1988, during which there were some absolutely wonderful projects, including a one-year station in Perth, Western Australia, two years sted in Khartoum, Sudan during which he participated in Chevron’s first land 3D, plus various transfers to Louisiana, Colorado, California, and back to Texas. After Chevron and Gulf merged, he requested and got assignment onboard the R/V Helix Hedberg research vessel, which accomplished Chevron’s first onboard processed 3D cube.

George has been a mercenary geophysicist since 1989 when he formed Seisborg Geophysical, LP, which has provided the opportunity to travel extensively to job sites including the North Sea, Persian Gulf, UK, Norway, France, Australia, Congo, Dubai, and Egypt. However, most projects are performed in Houston. Working for various clients processing projects through various contractors provides an active on-going education.

George and his wife, Margaret, live on (sometimes “in”) the waterfront in Seabrook, TX.

Frank Dumanoir, Candidate for President

After graduating from Rice University in 1974 (BSEE), Frank joined Esso Production Research. He was involved in proprietary Marine Seismic Source and Streamer development and later served as Marine Operations Supervisor at Exxon USA overseeing proprietary marine acquisition in the Gulf of Mexico.

In 1982, Frank joined CGG where he spent seventeen years, the last twelve as Houston Data Processing Center Manager. While there, he oversaw the growth of the center’s activity and the emphasis on 3D Time and Depth processing.

Following stints at Geophysical Development Corp and Paradigm Geophysical, which he joined in 2006 to work on the development of advanced processing and imaging services for those companies, in 2003, Frank joined NiTe Energy Services as Global Business Development Manager for the newly formed TGS Imaging division.

In 2004, TGS-NOPEC acquired the assets of NiTe Energy Services. Frank currently continues his work as Business Development Manager for the TGS Imaging division.

His interests are focused on 3D Imaging technology and the promotion of new processing techniques and results for TGS’ proprietary clients as well as for Multi-Client surveys.

Frank has been an active member of the GSH and SEG since 1979. He served as GSH Treasurer in 2002-2003 and worked several years with the GSH Data Processing SIG committee. Frank is a member of the AAPG.

Raymond Abma, Candidate for First Vice President

Raymond Abma is a Senior Research Geophysicist in the Advanced Seismic Imaging team in the Exploration Development Manager for the newly formed TGS Imaging division.

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Mike Graul, Candidate for First Vice President

Mike Graul received his B.S. in Geophysics from the Rensselaer Polytechnic Institute in 1957, and began a twenty-three-year career with Chevron as a field crew seismologist. Over the years he served a variety of assignments in acquisition, processing, interpretation, management and research. His inventions related to beam steering (Radon), signal enhancement, and AVO, led to numerous patents, and are still in wide use throughout the world.

In the late 1970’s Mike served the University of Houston Geosciences Department as an adjunct professor teaching graduate courses. In 1980 he left Chevron and founded Exploration Consultants, offering a variety of geophysical courses worldwide. In 2000 he co-founded Texseis Inc., a seismic processing company, and is currently vice president of Research and Development.

Mike has developed and presented courses to over seventy different oil and mineral companies in more than twenty countries. His courses have been offered by the SEG, AAPG, SPE, University of Houston, Colorado School of Mines, Stanford University, University of Missouri (Rolla), the Universities of Arkansas and Nebraska, and several foreign universities. He developed and taught the SEG CE courses on AVO, Deconvolution, andStatics.

Mike was co-chairman of the 2001 GSH Spring Symposium on “Reservoir Resolution through Comprehensive Use of Seismic Data Attributes.” Recently, Mike was honored by the SEG with a Special Commendation, and in 2003, with the SEG Honorary Membership Award. In 2004 he was awarded Honorary Membership by the GSH. He is a member of the SEG, GSH, DGS, IEEE, and EAEG.

Keith Matthews, Candidate for Second Vice President

Mr. Matthews is currently employed as Data Processing Sales Manager at Fairfield Industries in Sugar Land, Texas. He has over thirty-five years experience in the geophysical industry working for GSI, HGS, Enertec, and Vanguard Geological. He has worked in England, The Netherlands, and Houston with all aspects of the business: field operations (both land and marine), 2D and 3D seismic processing, marketing and sales. Mr. Matthews was educated in England and enjoys coaching soccer, reading and traveling as his hobbies.

Mr. Matthews is a member of SEG, and was General Chairman for the highly acclaimed SEG Houston Convention in 2005. He previously served on the GSH committee as treasurer in 2003.

Shane Coperude, Candidate for Second Vice President

Shane received a Bachelor of Arts Degree (Honors College) in Physics from the University of Oregon in 1970. After obtaining the Physics Degree, Shane spent four years as an officer in the Air Force obtaining the rank of Captain. Shane then returned to the University of Oregon and received a second Bachelor of Arts Degree in Geology followed by a Masters Degree in Geophysics from Oregon State University in 1978. He also attended the South Texas College of Law from 1994 to 1998 and received the Doctor of Jurisprudence degree. Shane was a licensed attorney in 1999. His areas of emphasis in law school were international law and intellectual property law.

Shane began his geophysical career during his undergraduate studies by working summers for Lockheed/NASA in the field of microearthquake detection. After obtaining the Masters Degree, he began full-time employment in the oil and gas industry in Shelly Oil Company in New Orleans, working in data acquisition and processing. He then joined Southwestern Energy in Amarillo, Texas, obtaining the position of District Geophysicist for their West Texas region. For the last several years Shane has worked on the contracting side of the geophysical industry and since 1995 has been an Area Geophysicist for the Houston office of Fairfield Industries, working in such seismic fields as migration, AVO, inversion, and transition zone processing. Shane has published papers in diverse areas such as plate tectonics, high resolution seismics, Radon deconvolution and endangered species. He is also active in the legal area working in such fields as intellectual property and contracts.

Shane has been active in both the SEG and GSH. He has been a member of the SEG since 1979 and has also been a member of the EAGE. For the SEG, Shane has been the Vice-Chairman and Chairman of the Global Affairs Committee (GAC). He is currently the Regional Coordinator for the Pacific Region of the GAC and recently served on the 75th Anniversary Committee. For the GSH, Shane served as Treasurer for the 2000-2001 and 2001-2002 fiscal years. Before this he was the coordinator for the noon luncheons.
J. Haynie Stringer, Candidate for Treasurer

Haynie Stringer graduated from Mississippi State University with a Bachelors of Science degree in mathematics and immediately began work at Western Geophysical Company in Houston, Texas as a computer programmer. After spending most of the first two years of his career traveling among field crews to install and support on-board computer systems, he returned to Houston where his career evolved through programming manager, project manager, and vice president at Western’s Aero Service Division.

Haynie’s last positions before retiring at the end of 2004, were Manager of Applied Technology Software at WesternGeco and Product Champion of Seismic Data Management at SIS. He holds patents in data management and data delivery techniques, has co-authored and presented papers and served as session chair at the SEG and other conventions, has published several articles, and has served on several geophysical industry committees. He currently serves on the GSH museum committee and is a member of the SEG, EAGE and GSH.

Dwight Brown, Candidate for Treasurer

Dwight Brown has over thirty-five years of experience working in the oil and gas industry. After completing his final year of education at Rice University’s Jesse H. Jones School of Business, Dwight began his career in Houston working for Myron Kinley, the original oil well fire fighter. Switching from the oil fields to an office environment, Dwight was employed for many years by Western Geophysical as a seismic data processor. For the last twenty years Dwight has been active in records management, having worked for Rockall Data Services, Hays Information Management and is currently employed by Iron Mountain as an Operations Manager in the Energy Division. Dwight has been a member of the Geophysical Society of Houston for the last five years. In his off hours Dwight enjoys motorcycle riding, antiquing and rock hounding in Colorado Springs, Colorado.

Fernanda Araujo, Candidate for Editor

Fernanda Araujo is a Geophysicist at ConocoPhillips in the Gulf of Mexico Exploration Team. Previously, she worked for ExxonMobil Upstream Research Company for 11 years. She received a B.S. in Electrical Engineering from the University of Brasilia in 1989, and a Ph.D. in Geophysics from the Federal University of Bahia, Brazil, in 1994. Fernanda received the SEG Karcher Award in recognition of significant contributions to the science and technology of exploration geophysics by a young scientist in 2000.

Fernanda’s professional interests include sedimentation and tectonics of salt-related basins, reservoir characterization, inversion and geophysical analysis, signal processing and noise attenuation. In her leisure time, she enjoys running, cycling and travelling.

Fernanda has been Assistant Editor for the GSH Newsletter for the last two years, working with John Sumner and Glenn Bear. She is a member of the GSH and SEG.
**Time to Cast Your Vote**

**Martin Stupel, Candidate for Secretary**

As Geophysical Manager for Geophysical Pursuit, Inc. I’m responsible for technical support of both survey acquisition and processing and coordinate all our data management activities. Prior to joining GPI in 2004, I fulfilled a variety of technical and managerial roles for sixteen years with WesternGeco, including Worldwide Data Management Manager, Multiclient Technology Manager, Area Manager Western Hemisphere Marine Multiclient, Marine Operations Area Geophysicist Far East & Australia, Marine Operations Geophysical Support Supervisor Western Hemisphere, and a variety of field assignments. I have been involved in design, planning and execution of over a hundred 3D marine surveys, from the Arctic Ocean to Northwest Shelf of Australia. I received my degree (B.Sc. Geological Sciences - Geophysics Option) from the University of Texas in 1988.

From 1997-2000, I served as SEG Continuing Education Instructor, presenting the course “Planning and Executing a Marine 3D Seismic Survey” at various venues worldwide. I am now in the fourth year of an eight year term on the SEG Scholarship Committee.

**Tad Smith, Candidate for Secretary**

Tad Smith manages a small, but very spirited, group of petrophysicists and geophysicists for Veritas/Hampson-Russell (formerly Veritas Exploration Services). He has a variety of responsibilities, but amongst his favorite is the analysis of petrophysical data in support of geophysical interpretation (i.e. “seismic petrophysics”). Indeed, it is his unyielding belief that seismic amplitudes cannot quantitatively be interpreted in the absence of petrophysical information.

Prior to joining Veritas, Tad held a variety of positions as a petrophysicist and geologist with Amoco, BP, and Newfield Exploration. His experience includes petrophysical and seismic rock property evaluation, AVO analysis, integrated field studies, exploration mapping, field development, and drilling operations. Tad received his PhD in geology from Texas A&M University in December, 1991, and an M.S. in geology from Washington University in June, 1987. He is a member of AAPG, SEG, SPWLA, HGS, and GSH, and currently co-chairs the Rock Physics SIG with his friend and mentor, Keith Katahara.

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**6th ANNUAL GSH SALTWATER TOURNAMENT**

**Saturday, June 24, 2006**

Teakwood Marina, Village of Tiki Island, Galveston, Texas

Galveston Bay Complex and Offshore

This year’s Saltwater Fishing Tournament will include an Offshore Division to be held on Saturday, June 24 at the Teakwood Marina, Village of Tiki Island, Galveston, Texas. We are looking forward to a big event this summer and we encourage full family participation.

**Galveston Bay Complex Division**

Trophies will be awarded for the heaviest individual Redfish (Non-Tagged), Speckled Trout, and Flounder. Trophies will also be awarded for the heaviest individual Striper - 1 Redfish, 3 Speckled Trout, and 1 Flounder.

**Galveston Offshore Division**

Trophies will be awarded for the heaviest individual Red Snapper, King Mackerel, and Dolphin.

Registration Fee ($60.00) includes:

Launch Fee, GSH Fishing Cap, Fish Fry Meal after weigh in, Refreshments, Trophies and DOOR PRIZES.

Greg Doll, Strand Energy, will be our Weigh Master • SEEKING SPONSORSHIP FOR THIS EVENT

For more information, please contact:
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281-240-4997 Fax • 281-795-2186 Cell • 281-495-8695 Home
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The Geophysical Society of Houston is a non-profit organization serving the Geophysical Industry. Corporate and individual contributions are appreciated and will be acknowledged on several sponsor boards and banners at the Weight-Ins Station and Marina. All contributors will be recognized in the GSH newsletter following the tournament. This is a great way to entertain friends, family, business associates, and clients. So spread the word!
SEG Distinguished Instructor Short-Course (DISC)
Hosted by Geophysical Society of Houston

May 5, 2006 – PGS on Memorial Drive
(Petroleum Geo-Services, Inc. • 15150 Memorial Drive)

Call for Sponsors and Support
Seismic Attribute Mapping of Structure and Stratigraphy
Dr. Kurt Marfurt, University of Houston

Overview: Seismic data are incredibly rich in information, including amplitude, frequency, and the configuration or morphology of reflection events. Seismic attributes, including volumetric estimates of coherence, dip/azimuth, curvature, amplitude texture, and spectral decomposition, can greatly accelerate the interpretation of newly acquired 3D surveys as well as provide new insight into old 3-D surveys. Successful use of seismic attributes requires both an understanding of seismic data quality and of sedimentary and tectonic processes. Participants in this one-day course will gain an understanding of the physical basis, geologic expression, and petrophysical calibration of seismic attributes.

Summary: This course will address the following questions:
• How can we use attributes to accelerate the interpretation of very large data volumes?
• What is the impact of seismic acquisition and processing on attribute images? Can we use attributes to help choose processing parameters?
• What is the physical basis for modern volumetric attributes, including coherence, dip/azimuth, curvature, amplitude gradients, textures, and spectral decomposition?
• How do we display these attributes to provide the most information and to communicate important concepts to non-technical members of our team?
• What is the attribute expression of clastic versus carbonate depositional environments? Of extensional versus compressional deformation?
• How can we use geometric attributes and spectral decomposition to more accurately define the reservoir model?
• Participants will be able to take home and use the answers and methods discussed in this course.

Who should attend?
• Seismic interpreters who want to extract more information from their data.
• Seismic processors and imagers who want to learn how their efforts impact sub- stratigraphic and fracture plays
• Sedimentologists, stratigraphers, and structural geologists who use large 3-D seismic volumes to interpret their plays within a regional, basin-wide context.
• Reservoir engineers whose work is based on detailed 3-D reservoir models and whose data are used to calibrate indirect measures of reservoir permeability.
• Advanced knowledge of seismic theory is not required; this course focuses on understanding and practice.

Cost is $65 for members of both GSH and SEG
VISIT THE GSH WEBSITE FOR DETAILS REGARDING VENUE AND REGISTRATION
http://gshtx.org
Prior to joining PGS in late ’94, he worked virtual event and its application to the attenuation of internal multiples and the separation of multicomponent Technology to this region, to the survey objectives, to the illumination analysis used in designing the location method via first breaks (86).

Bill Cafarelli is a Senior Geophysical Advisor with PGS.

Biography:
Mike Battle earned a Ph.D. in geophysics from MIT in 1978. Since then he has measured rock and fluid properties in his labs at ARCO and at Colorado School of Mines, where he is now a research professor. He is also co-founder and co-director of the CSM/UH Rock and Fluid Property Research Consortium. Over the years, Mike has studied and has published papers on most aspects of exploration rock physics, as well as on rock mechanics and borehole geophysics. SEG awarded him the Kauthman Gold Medal in 2002.

Abstract:
It has long been recognized that repeated gravity surveys could be used to track changes in elevation or mass distribution in the Earth. The technology to effectively track mass distribution changes resulting in _Gal_ level signals over long periods of time has matured in recent years. The Prudhoe Bay, Alaska, water flood surveillance project has hastened that development and set a new standard for the conduct of time lapse or 4-D gravity surveys. This talk will review the history of the Prudhoe Bay efforts and some of the milestones achieved along the way.

The Prudhoe Bay reservoir water flood is the largest ever undertaken and is intended to re-pressurize the gas cap and maintain declining production over a period of decades. The surveillance program consists of logging in existing wells supplemented by 4-D gravity measurements. 4-D seismic methods could be used, but are limited by expense and acquisition/processing challenges. In 1993 Jerry Brady and Don Walcott, then at ARCO Alaska, started to consider the application of repeated, surface and borehole micro-gravity surveys to monitor the waterflood.

**DATA PROCESSING SIG**

**Date:** Wednesday, March 29, 2006

**Time:** 5:00 PM Social time with snacks and soft drinks (our thanks to BP), 5:30 Presentation

**Location:** BP, 501 Westlake Park Drive, Houston, TX 77079 • 291-366-2000

Parking is available at the Westlake 1 garage. Take the main entrance to the visitor parking area at the tallest building on the campus

**Title:** Bending the Wrong Way and Imaging the Right Way

**Authors:** Ilana Erez and Luc T. Ibel

**Abstract:**
An analysis of scattering diagrams (i.e., Feynmann-like diagrams for wave scattering) of the correlation-type representation theorem has recently revealed a new type of scattering in inhomogeneous media.

Unlike common scattering events, the new events are inconsistent with the current interpretation of some of the basic physical laws, such as Snell’s law, just like the so-called “negative refraction” in optics. Yet we find these scattering diagrams very useful, for instance, in suppressing some undesired events from scattering data, in separating reflected and refracted waves, and even in imaging seismic data. In this presentation we will describe the results of the applications of this new type of scattering.

**Biographies:**
Ilana Erez received a B.Sc. in geophysics and atmospheric science from Tel Aviv University, Israel, in 2002. Since 2003 she has been studying for a master of science degree in geophysics at Texas A&M University, College Station. Her thesis is titled “The concept of the virtual event and its application to the attenuation of internal multiples and the separation of reflected and refracted waves.” She gave a poster presentation on this topic at the post-convention workshop at the 2005 SEG meeting. Some of her early results can be found at http://www.geois.ed.ac.uk/hoomes/acarlu/SEG05/SEG05_Erez.pdf.

Luc Ibel is a professor in the Department of Geology and Geophysics at Texas A&M University and director of the CASP project. His research interests include looking at ways of automating seismic data processing for reservoir definition and monitoring.

**GSH Multi-Component Seismic SIG • Inaugural Meeting**

**THURSDAY, MARCH 9, 2006 • 5:30 PM**

**1-CENTER WESTERN GEOC**

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**ULTRA-DEEPWATER 4C OFFSHORE BRAZIL**

**BY BILL CAFARELLI, PGS**

**Abstract:**
This is the case history of an ultra-deepwater 4C seismic program, recently acquired in the Campos and Santos Basins, offshore Brazil.

All aspects of the program will be discussed, from the feasibility study which first indicated the potential value of multicomponent Technology to this region, to the survey objectives, to the illumination analysis used in designing the survey, to the field operations, to the fully processed results.

**Biography:**
Bill Cafarelli is a Senior Geophysical Advisor with PGS.

For most of his 20-plus year industry career, he has been involved with multi-component data. Prior to joining PGS in late ’94, he worked as an Area Geophysicist with Western Geophysical (94), Halliburton Geological (92-93) and Geophysical Service (80-91).

Bill holds U.S. and International patents for a dual sensor processing method, and developed the first widely-used ocean bottom receiver location method via first breaks (86).

He received a B.A Degree in Mathematics from Boston College and an M.S. Degree in Geophysics from the University of New Orleans.

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**Potential Fields SIG continued on page 19.**