



Geophysical Society of Houston

VOL. 35, NO. 1

NEWSLETTER

AUGUST 2000

Please Join Us For The 2000 Icebreaker!

When:
September 11

Where:
**Hess Building
5430 Westheimer**

Time:
5:00 p.m. - 7:00 p.m.

**Call, e-mail or fax
reservations
to the GSH Office**

Technical Luncheon



John Lienhard, Engines of Our Ingenuity

Speaker: John Lienhard
Date: Tuesday,
September 19, 1999
Time: Register and Cash Bar
11:30 am
Luncheon and Talk
12:00 am
Cost: \$20
Location: H.E.S.S. Building
5430 Westheimer

Divining the earth's history and structure has been an exercise in "making the familiar strange," for the evidence of our eyes serves us poorly when we look at so large and ancient a body.

The Age and Other Troublesome Properties of the Earth

John Lienhard is the M D Anderson Professor of Mechanical Engineering and History at the University of Houston. He is also the author and voice of *The Engines of Our Ingenuity* which is produced by KUHF and heard nationally on public radio. *The Engines of Our Ingenuity* tells the story of how our culture is formed by human creativity. The program uses the record of history to reveal the way art, technology, and ideas have shaped us. *Engines* airs in Houston on KUHF-FM 88.7 at 7:35 AM and 3:55 PM, Monday through Friday.

John Lienhard's talk is expected to be very popular so be sure to get your reservations in early.

CONGRATULATIONS TO THE NEW GSH OFFICERS!

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1st VP - Roy E. Clark, Jr.
2nd VP - Claire Bresnahan
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I N S I D E T H I S I S S U E

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GEOPHYSICAL SOCIETY OF HOUSTON

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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 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 may be sent to patty@diamondg.com or faxed to 713/783-9780. If you have any questions please call Patty Cardwell at 713/783-7837.

2000 GSH Newsletter Deadlines

Issue September 2000
Deadline .. August 10, 2000

Issue October 2000
Deadline .. September 14, 2000

Membership Report

The GSH would like to welcome its newest members:

Active

George Adcock	Joseph Kneck
Robert P. Brown	John Krueger
Barry Casper	Erik Neuman
Ron Christensen	Kenneth Nixon
Wenjie Dong	Vigen Ohanian
Peter Homonko	Mrinal Sengupta
James Houston	Vikramaditya Sen
Raul Huerta	Theodore Stieglitz
Brian Hughes	Michael Zwick

Associate

Ping An
Ganglin Chen
Dechun Lin
Richard Hood
William Louder
Sandra O'Day
Charles Oliver
Troy Roach
Dharmawan Samsu
Beverly Scippa
Anthony Steele
Robert Wentland

GeoEvents Calendar

Make reservations by e-mail at reservations@hgs.org and include your member number (found on Bulletin mailing label), or use the phone reservation system at 713/917-0218.

Reservation Codes

Use these codes to make voice mail meeting reservations:

Technical Luncheon	601
Data Processing SIG	602
Interpretation SIG	603
Reservoir SIG	604
Potential Fields SIG	605
Environmental Applications SIG	606
Breakfast	607

The GSH would like to welcome the following companies as corporate members:

BP Amoco
(Corporate Partner)

Kerr-McGee
(Corporate Sponsor)

Conoco
(Corporate Underwriter)

Thank you for your supporting the GSH!

For information on how to become a corporate member or to endow a scholarship with an organization's name please contact the GSH office at (713) 785-6403.

SIG Meeting Announcements

Near-Surface/Environmental Applications

Activity Report

by Stephanie Hrabar, GSH Liaison to Citizens Environmental Coalition (CEC)

“Reception of Introduction”

On April 24 from 5:30 to 7:30 Stephanie Hrabar represented the GSH at a special reception of the African-American Community and Environmental Community (75+ members of CEC). The reception was held at the Ensemble Theatre at 3535 Main Street. This event was sponsored by the Citizens Environmental Coalition, Houston Urban League, Mothers for Clean Air, GHASP, National Association for the Advancement of Colored People, Environmental Defense (Texas office), GBCPA, and Sierra Club. Hrabar had the opportunity to visit with members of the host committee that included Mr. Jew Don Boney (City Council Member) Mr. O. P. Broussard, Ms Charolette Davis, Mr. Grover Hankins (TSU Law School), Rev. Bill Lawson, and Ms Yolanda Smith (NAACP), and guests of the hosts.

Different communities have different concerns and perspectives. However, we share some common threats, such as very poor air quality (ozone, fine dust particles, and other hazardous chemicals), flooding, subsidence, contaminated soils and redevelopment (brownfields and Superfund sites), polluted bayou waters where children play, and discriminatory practices in providing city services to neighborhoods and their parks. We could work together to solve some of them. The first important step is to meet informally and simply introduce ourselves. This is what happened.

About 75 + invited organizations and guests came together. In a 2-hour time span there was enough time to say hi and briefly summarize the mission of the SIG and GSH. Copies of the Earth Day 2000 booklet were offered to interested persons. The diversity of environmental issues, environmental groups, and immediate areas of interest of the respective diverse groups resulted in an

information overload in less than 2 hours. The informal dialog was interesting, informative, and a successful first step for some but the second step for Hrabar. She recently attended the first annual meeting of the National Association of Black Geologists and Geophysicists at the Petroleum Club. She was pleasantly surprised to see several geophysicists with whom she had worked during the past 29 years in industry.

Potential Fields

Gravity and Two Dimensional Basin Modeling, Offshore Myanmar - Explanation of Regional and Local Thermal Maturity and CO2 Variations.

By Matthews, Martin D.(Argonne National lab.), Kowalski, Michael, A., Robison, Vaughn R., and Ephraim, David B. (Texaco Exploration),

Date: September 21, 2000
Place: HESS building, 5430 Westheimer, Houston
Time: 5:30 Social Hour;
6:30 Dinner;
7:30 Presentation
Cost: \$22.00

Contact:
Afif Saad, Chair - GSH Potential Fields Group, at 281-342-8575 (afifsaads@netscape.net) or Bob Van Nieuwenhuise, Co-Chair at 281-679-2208 (Bob.VanNieuwenhuise@pgs.com) by Tuesday, September 19, for reservations. E-mail is best because we can confirm your reservation. Please HONOR your reservation! We must bill no-shows!

Abstract:

Heat flow in the Northeastern Gulf of Martaban currently varies spatially by a factor of, at least 2, and, over time, by nearly an order of magnitude. This variation is due to the recent rifting in the basin. Higher heat flows occur near the rift centers and decrease outward to a regional background in different do-

mains, both for wells and oceanographic surface measurements. This variation is significant both to hydrocarbon generation/migration and CO2 origin. The magnitude of the regional background heat flow is unknown. The distribution of available data is too sparse for meaningful determination.

Basin modeling was performed using rock properties derived from logs and constraining thermal history by bottom hole temperatures and vitrinite. This study indicates that there are three thermal events which are separated in time and space: 1) Formation of the sag, followed by a cooling-off period; 2) Renewed basin subsidence accompanied by faulting; 3) progressive heating events proceeding from the northern to the southern platform.

The kerogen in the Miocene source rock that is within the deep basins has matured as a function of depth. Here the migration is dominantly vertical. The kerogen in Miocene source rock on the shallow platform seems to have transformed as a function of local heating patterns and migration is affected by lateral units. In the areas of lower heat flow the source is immature.

The probability of CO2 generation is hypothesized to be greatest in, and adjacent to, regions of highest heat flow; it is located within the first trap out of the deep basin due to the confining Miocene overpressure.

To outline the possibilities of the above occurrences, the distribution of current heat flow has been divided into two classes, low and high. The spatial location of these classes appears to be related to Basement rifting and later intrusions. Satellite free-air gravity data is the key to understanding the spatial changes and origin of the different heat flow regimes. The definition of the rift architecture was configured by this data. Supplemental to the satellite data were a number of magnetic profiles from the NOAA data base. These widely spaced lines were used to speculate on the occurrence of igneous intrusives. The satellite free-air gravity data was then used to interpolate the aerial extent of such features.

SIG Meetings continued on page 5

NEW CHAIRMEN!

ANNOUNCEMENT OF
ACCEPTANCE

AFIF SAAD, CONSULTANT
and
BOB VAN NIEUWENHUISE, PGS
HAVE ACCEPTED
the
JOINT CHAIRMANSHIP
Of the
Potential-Fields Special Interest Group

Starting with the September meeting these gentlemen will be your organizers. Please welcome them and their efforts.

North American RC

The 2nd semi-annual North American RC SIG users group conference will be held at the National Research Council of Canada's Virtual Environment Technology Centre (VETC) on Thursday September 14th and Friday September 15th, 2000.

The conference is restricted to the first 100 invitees that R.S.V.P.

Contact H. Roice Nelson, Jr. at 713.860.5007 or rnelson@walden3d.com if you did not receive an invitation. There is also information at <http://www.continuum-corp.com/rcsig>.

Near Surface Year End Report

The Near-Surface Special Interest Group (SIG) of the Geophysical Society of Houston held five meetings during the 1999-2000 society year. All of the meetings were held at the ExxonMobil Upstream Research Company office located at Buffalo Speedway at Richmond Avenue.

During the year, a total of 39 people attended one or more presentations of this SIG, with an average attendance of about 12.

The following is a chronological list of the meetings:

Wednesday, September 22, 1999,
5:30 PM

Ms. Evelyn Medvin, Vice-President, Business Development, Coherence Technology Company, Inc., a Division of Core Laboratories
Application of Coherence Cube(tm) Processing to Marine Shallow-Hazard Detection

Tuesday, November 16, 1999, 5:30 PM
Ms. Diana Dana, Masters Candidate in Geophysics at Rice University

High-Resolution Seismic Survey Over a Near-Surface Contamination Site

Tuesday, February 1, 2000, 5:30 PM
Mr. Sharma Dronamraju, C.P.G., Project Geologist Fugro GeoServices, Inc.

High-Resolution 3-D Seismic Data for GeoHazards Assessment

Tuesday, March 21, 2000, 5:30 PM
William D. Rizer, W. D. Rizer Consulting

Characterization of Flow in a Shallow Fractured Carbonate Reservoir

Tuesday, May 9, 2000, 5:30 PM
Peter Trabant, Consultant
Identifying Shallow Water Flow Drilling Hazards in Deepwater Using Sequence Stratigraphy

Come visit our new website!

<http://gsh.seg.org>

Death Notices/Obituaries - VICTOR CORTEZ BOYD, JR., 72, of Houston, died

Wednesday, May 3, 2000. Mr. Boyd was born in Natchitoches Parish, Louisiana on January 20, 1928. He served in the U.S. Army for two years during the Occupation of Japan. Mr. Boyd attended Louisiana State University and Northwestern Louisiana State University. He later retired from Western Geophysical Co., having attained the rank of Executive Vice-President. Mr. Boyd was a Life Master with the American Contract Bridge League and a member of the Society of Exploration Geophysicists. He is survived by his wife, Shirley Boyd; daughters Sarah Boyd and her husband Chad Stoner, and Megan Kent and her husband Chuck Kent; sons Robert Boyd and Victor C. Boyd, III; grandchildren Ford Kent and Sarah Kent; sisters Carol Huitt and Corrie Shea McFatter; eleven nieces and nephews and many grand nieces and nephews. A memorial service was held on Saturday, May 6, 2000. Contributions may be directed to Houston Hospice, 8811 Gaylord, Suite 100, Houston, Texas 77024-2923, The American Cancer Society, 6301 Richmond Avenue, Houston, Texas 77057 or to the charity of your choice.

Growth Of Noise In The Oceans, And Its Effect On Marine Mammals

Jack Caldwell

Attention has been increasingly drawn to the issue of dramatically rising noise levels in the world's oceans, and the possible effects those levels have on marine life (particularly marine mammals). This increased attention is a global phenomenon involving several nations. The U.K. and Australia, along with the U.S., are studying the effects of seismic survey noise on mammals, and are requiring mitigation to help protect marine mammals from possible negative effects of seismic survey noise. In the U.S., the various groups most actively involved (and most aware of developments taking place) with regard to the overall noise issue include U.S. federal and state regulatory bodies (such as the Minerals Management Service (MMS), the National Marine Fisheries Service (NMFS), the California Coastal Commission (CCC), etc.), biologists (particularly those interested in marine mammals), acousticians (especially those who study sound propagation in the oceans), various groups who use sound in the oceans for their research (U.S. Navy, U.S. Geological Survey, numerous universities), and environmental groups (such as the Natural Resources Defense Council (NRDC)). Less aware is the oil industry, and perhaps less still is the shipping industry. The National Research Council conducted a study on this issue beginning in 1992 and ending in 1994. That study concluded that the state of knowledge concerning the effects of noise on marine mammals is woefully lacking. Research is being conducted by various groups to improve the state of knowledge, but there is still a scarcity of definitive work. Key questions include at what level of sound amplitude is a particular species placed at risk of physical injury or significant changes in behavioral response, is the risk level situated in different frequency bands for different species, is continuous noise at moderate levels more likely to cause damage than intermittent noise at higher levels, and are there mitigation measures which can protect, or help protect, marine mammals from harm.

Relevant Existing Regulations - MMPA and NEPA

Various laws have already been enacted by the U.S. Congress which have relevance to the issue of sounds in the oceans and their effects on marine life, with the Marine Mammals Protection Act of 1972 being the key one. This Act forbids harassing any marine mammal except when a special exemption is specifically obtained. Exemptions of two types are available to U.S. citizens from NMFS for incidental harassment whose effects on marine mammal populations are expected to be negligible: IHA's for non-injurious harassment during a specific project within a 1-year period, and incidental take regulations applicable to a class of related activities over a 5-year period. A noteworthy aspect of this Act is that if the effect of an activity on marine mammals is not known, but it could possibly cause harassment, then that activity is forbidden. Another important relevant law is the National Environmental Policy Act (NEPA) of 1969. This Act requires that all administrative agencies of the U.S. Government consider the environmental impact of their actions in approving projects submitted to them. If the submitted project might significantly affect the environment, then an Environmental Impact Statement (EIS) must be prepared.

Recent High Visibility Projects Using Intense Sounds in the Oceans

The Acoustic Thermometry of Ocean Climate (ATOC) project, undertaken by Scripps Institution of Oceanography in the mid-late 1990's, was based on the idea of injecting sound into the ocean sonar channel to monitor the average temperature of the world's oceans by noting whether the sound speed increased or decreased over time frames of several years. This project involved placing transmitters off the California coast and off Hawaii, and injecting sound levels of 195 dB re 1 (Pa). Various groups based in California and Hawaii forced delays and substantial

changes in the project before all necessary approvals were in place. The U.S. Navy's Low-Frequency Active (LFA) sonar program uses low frequency sound waves to detect submarines. Several groups indicated their concern over this project, a result of which has been that the Navy is generating an Overseas Environmental Impact Statement (OEIS). The 1995 3D seismic survey conducted off the California coast near Santa Barbara for Exxon (the first seismic survey in federal waters off California since 1988) created much concern from some California State agencies and local environmental groups. These groups wanted to intervene in the NMFS's IHA process and threatened to file legal action if their concerns were not addressed. As a result of these threats, NMFS and Exxon agreed to additional monitoring and mitigation measures over and above those originally called for by NMFS. Most recently (in early 1999), the U.S. Geological Survey was denied permission by the California Coastal Commission to use airguns to map structures which could provide information about the encroachment of salt water into fresh water aquifers.

MMS and the HESS Team

When the Pacific Outer Continental Shelf Region office of the Minerals Management Service saw the level of interest raised by several environmental groups, as well as some California state agencies, during the permitting process for the 3D seismic survey in 1995, it took a proactive approach. To ameliorate the ensuing situation, that MMS office organized a series of workshops involving all interested parties. Individuals representing these interested parties formed the High Energy Seismic Survey (HESS) Team. The Team consisted of 20 members from regulatory groups (federal, state, and county), 7 members from the oil industry, 6 members from environmental groups, and 1 member from the U.S. Geological Survey, and

Growth of Noise continued on page 7

had as its ultimate goal the creation of a recommended permit application process which would satisfy all of the different groups. This HESS Team worked between September, 1996, and February, 1999, to generate its recommendations. In the course of its work, the HESS Team convened a panel of experts in acoustics, biology, and geophysics. The discussions and recommendations produced by this team were viewed with interest by many groups, not the least of which was the National Marine Fisheries Service (NMFS), who, along with the U.S. Fish and Wildlife Service (USFWS), has the responsibility of enforcing the MMPA. The primary ultimate results (to date) of the HESS Team activities include the generation of a recommended review process and interim operational guidelines for marine surveys offshore southern California, the recommendation from the expert panel that a level of 180 dB (RMS level over the time duration of the pulse) re 1 (Pa be used for the time being as the threshold above which sounds might be considered as dangerous to marine mammals, an airing of issues and an assessment of the state of knowledge relevant to the NMFS's task of reviewing the MMPA on the occasion of its renewal, and Fallout from the HESS Team activity probably helped contribute to the call to action by the MMS for an environmental assessment of all geologic and geophysical activities in the Gulf of Mexico.

NMFS and Renewal of the MMPA

The National Marine Fisheries Service (NMFS) has the responsibility to review the content of the Marine Mammals Protection Act and submit recommendations about how to amend it to Congress when Congress reviews the Act for renewal in 2000. When the Act was originally written in 1972, the issue of noise was basically unrecognized, and the language of the Act was vague with regard to the meaning of harassment and "take" (to "take" a marine mammal is to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal). NMFS is trying to produce more specific and well-defined wording in the MMPA, and to include wording with specific reference to sound/noise. The Act formally expired

at the end of September, 1999, but has an automatic extension until Congress acts on it. Congress probably will hold hearings on it some time in the second half of 2000. Other governmental bodies besides NMFS and interested groups are currently preparing recommendations to present at the congressional hearings.

The Minerals Management Service and the Environmental Assessment in the Gulf of Mexico

The MMS awarded a contract to Continental Shelf Associates (CSA) in March, 1999, to generate a Programmatic Environmental Assessment on Geological and Geophysical Exploration for Mineral Resources on the Gulf of Mexico Offshore Continental Shelf. The last such assessment was concluded in 1976. Major changes have taken place in how seismic surveys, in particular, are done today versus then, although the seismic sources used are essentially the same. Major changes have also taken place in knowledge about acoustic effects on marine mammals, especially behavioral effects. The current EA is expected to be completed and delivered to the MMS around July 1, 2000.

The Current Dilemma

The U.S. Navy, U.S. academic and governmental research groups, and the seismic industry (as well as other industries such as fishing and shipping) all generate sound in the oceans at levels which might be harmful to marine mammals either through disturbing them or through injury (especially auditory injury). The scientific studies establishing the relationship between these sound sources and injury to mammals do not exist yet. But the possibility exists that such sounds may be injurious. Therefore, there is the possibility that negative environmental effects can result from these activities. However, restricting these activities could also lead to negative environmental effects, the magnitudes of which are also unclear. Hence, the dilemma is to try and find a reasonable balance in these unknown environmental effects, at least until appropriate research is carried out to better assess them.

3rd Annual Seismic Softball Tournament

The 3rd Annual Seismic Softball Tournament to benefit The SEG Foundation charity will be held in Houston, Texas on October 14. All games will be played at Houston Sportsplex located at 12631 South Main, Houston, Texas 77035.

Last year PGS Data Processing, BP Amoco, Geco-Prakla and Sercel (formerly Syntron) were able to raise \$9,000 for the SEG Education Foundation. The SEG matched that \$9,000 for a total donation of \$18,000. This was down from the previous year, but we hope to be able to improve this year with your participation in this great cause. Not to mention, it is good fun!

The entry fee is \$1,500 per team. The 1st place team will receive T-shirts and be the proud holder of the SEG Tournament Championship Trophy until the year 2001 tournament.

For more information about the 3rd Annual Seismic Softball Tournament, please contact Michael Zwick before Friday, September 15th at 281-647-7216 or via email to michael.zwick@sercelus.com.

Life Member Luncheon

Life member event for all Hess members and friends

When: Friday, August 25th,
11:00 a.m. - 2 p.m.
Speaker: Dr. John Lienhard,
Professor of
Engineering at
University of Houston
Topic: Origin of Evolution and
Engineering
Reservations: call Jean at
713-627-2283 x 103;
\$13.00
Seated lunch served at noon

Photo Page



Incoming Officers for 2000/2001: Dave Agarwal (President Elect), Roy Clark, Jr. (1st VP), Claire Bresnahan (2nd VP), Steve Danbom (Secretary), John Sumner (President)



*Pat Starich (1999/2000 President),
John Sumner (2000/2001 President)
"Passing the Shovel"*



Bob Immel, Shawn Porche, Tony Almond



Mike Saunders, Norm Mark



April Robertson, Alan Foley, Patty Cardwell



Ashok Ghosh, Cheryl Stevens



University Of Houston

Department Of Geosciences Schedule Of Classes For Fall 2000

Undergraduate Courses

Physical Geology.....	MW 8.30-10, TTh 8.30-10, TTh 10-11.30, MW 11-12.30, TTh 11.30-1, TTh 1-2.30, MW 2.30-4, TTH 2.30-4, MW 4-5.30, TTh 4-5.30	
Historical Geology.....	TTh 8.30-10, MWF 11-12, MW 5.30-7	
Environmental Geology	TTh 10-11.30	Chafetz
Introduction to Oceanography	internet course.....	Maddocks
Mineralogy	MW 2.30-5.30	Reid
Optical Mineralogy	TTh 2.30-5.30	Reid
Introduction to Geophysics	TTh 5.30-7	Sheriff

Graduate Courses

Geochemistry	TTh 11.30-1	Capuano
Carbonate Sedimentology	TTh 5.30-7	Chafetz
Plate Tectonics.....	MW 5.30-7	Casey
Sedimentation and Tectonics.....	to be arranged	Evans
Migration of Seismic Data	MW 7-8.30	Zhou
Image Processing GIS	TTh 5.30-7	Nagihara
Seismic Interpretation	TTh 7-8.30	Marfurt
Introduction to Arc-view	M 7-10	Patel
Geophysical Data Processing	MW 5.30-7	Zhou
Wave Equation Processes.....	to be arranged	Weglein
Reservoir Geophysics	TTh 7-8.30	Sheriff

MW-Monday and Wednesday; TTh-Tuesday and Thursday

GSH Publications Available At The GSH Office

For those of you that have a yearning for some landmark publications, check out these classics. They are free on a first-come first-served basis (although a nominal contribution would certainly not be refused). Stop by the GSH office at 7457 Harwin Drive, Suite 301 to pick them up.

Symposium of Geophysical Modeling

May 10, 1983
only 5 copies left

Borehole Gravity Surveys 1993

only 4 copies left

Acoustic Impedance

November, 1978
only 7 copies left

Advanced Seismic Data Acquisition

November, 1976
only 6 copies left

In addition to these free publications, there are also some publications available at nominal cost:

Migration: Imaging versus Positioning

February, 1995
\$20

Pitfalls of 3-D Seismic

March, 1994
\$20

Photo Directory, GSH

1980
\$10

The Seismic Velocity Model as an Interpretation Asset

1999
\$20

The last weekend
before Dove season!

15th Annual GSH Sporting Clays Tournament



Saturday, August 26, 2000
American Shooting Centers
16500 Westheimer Pkwy.

This year's Sporting Clays Tournament will be held on Saturday, August 26 at the American Shooting Centers. We expect an even greater level of participation this year, since our tournament date falls on the weekend prior to Dove Season. This is your last chance to get practice in before the season starts. The tournament is an all day event and family participation is encouraged. Non-GSH members are welcome.

The tournament is a 50 bird event, designed to simulate actual field conditions. Shells are provided, however you must bring eye and ear protection. Prizes will be awarded for shooting prowess in various levels of expertise.

BBQ lunch and refreshments are provided throughout the day. Door prizes (made possible through corporate sponsorship) will be awarded after the conclusion of shooting.

For more information, contact: Steve Bircher at 713-780-8334 or sbircher@hrs-us.com

GSH SPORTING CLAYS REGISTRATION FORM

Name: _____ Company: _____

Address: _____

Email: _____ Phone: _____

Preferred shooting time: (circle one) 8:00 9:45 11:30 1:15

Indicate ammunition required: (circle one) 12 gauge 20 gauge

Please return form(s) with check for \$55.00 per shooter, payable to: Geophysical Society of Houston
Mail to: Steve Bircher c/o Hampson-Russell Software, 3000 Wilcrest #170, Houston, TX 77042

Registration Fee: \$ _____ + Sponsor Contribution: \$ _____ = Total: \$ _____

If you wish to shoot with a specific squad (5 shooters max.), please submit all forms together.

DISCLAIMER:

I acknowledge that neither the Geophysical Society of Houston nor the American Shooting Centers will be held responsible for injury or accidents during this event. PRACTICE SAFETY!!

Signature: _____



**These short courses will be held in
October at the GCAGS 2000 Annual
Convention, Houston, Texas!**

See more info on the web site

www.gcags.org/convention2000/calendar

**Look for registration details in the mid-August convention
announcement. Priority will be given to GCAGS 2000
registrants, so sign up early!**



Gulf Coast Association of Geological Societies - Gulf Coast Section SEPAM

Interpretation of 3-D

Seismic Data

Alistair Brown, Oct 23rd-25th

*Course sponsor: Landmark
Graphics Corporation
(speaker's fees paid for by
LGC) Tuition: \$150*



Landmark

A Halliburton Company

Seismic Fundamentals

Don Macpherson

Oct 23rd-25th

Course sponsor: GCAGS

Tuition: \$150



Intro to the Petroleum

Geology of Deep-Water

Clastic Depositional Systems

Roger Slatt & Paul Weimer,

Oct 23rd-25th

*Course sponsor: American
Association of Petroleum
Geologists*

Tuition: \$150



Comprehensive Evaluation of

Rock Samples: Getting the

most out of Conventional

Cores, SWC's and Cuttings

Oct 25th Course sponsor:

Core Lab

Tuition: \$50



Independent

Consultant

Seminar

Oct 25th

*Course sponsors:
SIPES Foundation
and HGS*

Tuition: \$50



Evaluation of Pressure Data

and Overpressure

Prediction

for Exploration and

Development *Phil Heppard,*

Martin Albertin & Richard

Lahann, Oct 25th

Course sponsor: BP-Amoco

Tuition: \$50

BP Amoco



Workstation Interpretation:

Seismic Micro-Technology

Jerel Pierce,

Oct 28th & 29th

*Course Sponsors: Seismic
Micro-Technology and
NHCC / GTTC
Tuition: \$100*



A NORTH HARRIS MONTGOMERY COMMUNITY COLLEGE

Immersive Environments

*(Lecture and tour of 3-D
visualization sites)*

Oct 24th & 25th

*Course sponsors: Texaco &
Silicon Graphics, Inc.*

Tuition: \$100



sgi

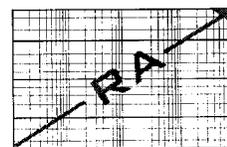
Risk Analysis

Pete Rose & Gary Citron

Oct 24th & 25th

*Course sponsor: Rose &
Associates, Inc.*

Tuition: \$100



**Coal Bed Methane Potential
of the Gulf Coast**

Andrew Scott,

Roger Tyler, and others, Oct 28th

*Course Sponsors: PTTC
Central, Eastern and Texas
Divisions and the Energy
Minerals Division of AAPG
Tuition: \$50*



TECHNOLOGY CONNECTIONS
PETROLEUM TECHNOLOGY TRANSFER COUNCIL



Applied Biostratigraphy

Richard Constans,

Garry Jones, and others

October 25th

Course Sponsors: Spirit

Energy and Chevron

Tuition: \$50



AUGUST 2000

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
		1	2	3	4	5
6	7	8	9	10 NEWSLETTER DEADLINE	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26 Sporting Clays Tournament 16500 Westheimer Pkwy
27	28	29	30	31		

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