



SHORT COURSES

Important notes regarding short courses

- Short course enrollment is limited and reserved on a first-come first-served basis.
 - Registration must be accompanied by full payment.
 - If you register for a short course only, a \$30 non-registrant fee will be added to the short course fee. This fee may be applied toward registration if you decide to attend the convention.
 - A wait list is automatically created if a short course sells out. The AAPG Convention Department will notify you if space becomes available.
 - Before purchasing non-refundable airline tickets, confirm with the AAPG Convention Department that the course will take place.
 - If any of these short courses meet your needs or the needs of your professional staff, you are strongly encouraged to register early. To help us better anticipate the number of attendees and avoid premature cancellation of short courses, please register well before 11 March 2010.
 - You will receive notification of the specific location of your course.
 - Courses may be cancelled if undersubscribed; please keep this in mind when purchasing non-refundable airfares.
- **Students – A limited number of student discount spots (approximately 50% of professional fee) are available in some short courses and field trips. Please register for the convention and then contact us at convene@AAPG.org or +1 918 560 2617 for availability in the course or trip you are interested in. If a discounted spot is available we will be happy to process your request at that time.**



GARY BARCHFELD

1	From Rocks to Models — Reservoir Geology for Graduate Students (NOGS)	Saturday, 10 April – Sunday, 11 April	8:00 a.m. – 4:00 p.m.	\$10 (Graduate Students only)
2	Practical Salt Tectonics (AAPG)	Friday, 9 April – Sunday, 11 April	8:00 a.m. – 5:00 p.m.	AAPG Members \$1,050 (increases to \$1,150 after March 12) Nonmembers \$1,150 (increases to \$1,250 after 12 March) AAPG Student members (limited) \$525 (increases to \$575 after 12 March) Student nonmembers (limited) \$575 (increases to \$625 after 12 March)
3	Assessment of Unconventional Shale Resources Using Geochemistry (AAPG)	Saturday, 10 April – Sunday, 11 April	8:00 a.m. – 5:00 p.m.	AAPG members \$850 (increases to \$950 after 12 March) Nonmembers \$950 (increases to \$1,050 after 12 March) AAPG Student members (limited) \$425 (increases to \$475 after 12 March) Student nonmembers (limited) \$475 (increases to \$525 after 12 March)
4	Geology and Geophysics Applied in Industry (AAPG-SC/SEPM)	Sunday, 11 April	8:00 a.m. – 5:00 p.m.	\$20 (Students and Faculty Advisors only)
5	Fundamentals of Gas Hydrate Resource Evaluation (EMD)	Saturday, 10 April	8:00 a.m. – 5:00 p.m.	Professionals \$125 Students \$63 (limited)
6	Sequence Stratigraphy for Graduate Students (SEPM)	Saturday, 10 April – Sunday, 11 April	8:00 a.m. – 5:00 p.m.	\$10 (Graduate Students only)
7	3-D Seismic Interpretation for Geologists (SEPM)	Saturday, 10 April – Sunday, 11 April	8:00 a.m. – 5:00 p.m.	Professionals \$300 Students (limited) \$150
8	Sequence-Stratigraphic Analysis of Shales: Key to Paleoclimate Archives, Subsurface Fluid Flow and Hydrocarbon Source, Reservoir and Seal (SEPM)	Saturday, 10 April	8:00 a.m. – 5:00 p.m.	Professionals \$225 Students (limited) \$112
9	Evolution of Neogene Mixed Carbonate-Siliciclastic Systems (SEPM)	Sunday, 11 April	8:00 a.m. – 5:00 p.m.	Professionals \$250 Students (limited) \$125
10	Reservoir Geophysics: Applications (SEG) (registration and breakfast available at 7:00 a.m.)	Sunday, 11 April	8:00 a.m. – 5:00 p.m.	SEG Members \$495 (increases to \$530 after 10 March) Non-members (includes SEG membership) \$585 (increases to \$620 after 10 March) Students (limited) \$25 (increases to \$60 after 10 March)
11	Reservoir Engineering for Geologists (DPA)	Thursday, 15 April	8:00 a.m. – 5:00 p.m.	Professionals \$132 Students \$66
12	Quality Control for Subsurface Maps (QLTs) (DPA)	Thursday, 15 April	8:00 a.m. – 5:00 p.m.	DPA Members \$165 NonDPA Members \$205 Students (limited) \$85
13	Enhanced Oil Recovery Through Wettability Alteration and Gas-Assisted Gravity Drainage (PTTC)	Thursday, 15 April	8:00 a.m. – 5:00 p.m.	Professional \$300 Students \$150
14	Deltas: Processes, Stratigraphy, and Reservoirs — Core Workshop	Thursday, 15 April – Friday, 16 April	8:00 a.m. – 5:00 p.m.	Professionals \$335 Students (limited) \$167



SHORT COURSES

Pre-Convention Short Course 1

New Orleans Geological Society (NOGS)

From Rocks to Models — Reservoir Geology for Graduate Students

Dates: Saturday, 10 April – Sunday, 11 April

Time: 8:00 a.m. – 4:00 p.m.

Location: Ernest N. Morial Convention Center

Instructor: Matt Pranter (University of Colorado, Boulder, CO)

Fee: \$10 (Graduate Students only)

Includes: Course notes and refreshments

Limit: 40 people

This course provides an introduction to reservoir characterization and modeling concepts and methods. The focus is on geological (e.g., stratigraphic, sedimentological) controls on reservoir characteristics and practical aspects of reservoir modeling (i.e. how reservoir geologists use reservoir modeling as a tool to address geological and reservoir questions).

Different types of sedimentary deposits and reservoirs (siliciclastics, carbonates) are presented, and the techniques to evaluate the reservoir architecture and estimate reservoir properties are addressed. The role and significance of outcrop and modern analogs for reservoir characterization and modeling are emphasized through examples. Topics include:

- Overview of petroleum geology and petroleum systems
- Sedimentary rock properties
- Siliciclastic and carbonate deposits and reservoirs
- Pay determination and flow units
- Reservoir mapping
- Reservoir modeling methods
- Reserves estimation

Pre-Convention Short Course 2

American Association of Petroleum Geologists (AAPG)

Practical Salt Tectonics

Date: Friday, 9 April – Sunday, 11 April

Times: 8:00 a.m. – 5:00 p.m.

Location: Ernest N. Morial Convention Center

Fee: AAPG Members \$1,050 (increases to \$1,150 after March 12)

Nonmembers \$1,150 (increases to \$1,250 after 12 March)

AAPG Student members (limited) \$525 (increases to \$575 after 12 March)

Student nonmembers (limited) \$575 (increases to \$625 after 12 March)

Includes: Course notes and refreshments

Instructor: Mark G. Rowan (Consultant, Boulder, CO)

Limit: 50 people

Content: 2.1 CEU

This course is for exploration and production geologists, geophysicists, and managers working in salt basins worldwide who need either an introduction to salt tectonics or an update in this rapidly evolving field.

Our understanding of salt tectonics has advanced significantly over the past two decades, and this course will help industry geoscientists in understanding and applying the newest concepts, models and techniques. We will use a combination of seismic data, realistic models, field exposures and reconstructed histories to illustrate the varying 3-D geometry and evolution of real salt structures from various salt basins in different tectonic environments around the world. This is an applied course that will introduce practical tools for seismic interpretation and emphasize the impact of salt on fault and trap geometries, sedimentation and hydrocarbon maturation and migration. The course will consist of a combination of lectures and workshop exercises. Content includes:

- Origin of evaporite basins
- Mechanics of salt deformation
- Initiation and growth of diapirs
- Near-diapir deformation
- Emplacement and evolution of allochthonous salt
- Salt in thick-skinned extension
- Salt in convergent-margin foldbelts
- Salt on passive margins
- Salt-sediment interaction
- Salt and hydrocarbon maturation/migration

Pre-Convention Short Course 3

American Association of Petroleum Geologists (AAPG)

Assessment of Unconventional Shale Resources Using Geochemistry

Date: Saturday, 10 April – Sunday, 11 April

Time: 8:00 a.m. – 5:00 p.m.

Location: Ernest N. Morial Convention Center

Instructor: Daniel M. Jarvie (Humble Geochemical Services, Humble, TX)

Fee: AAPG members \$850 (increases to \$950 after 12 March)

Nonmembers \$950 (increases to \$1,050 after 12 March)

AAPG Student members (limited) \$425 (increases to \$475 after 12 March)

Student nonmembers (limited) \$475 (increases to \$525 after 12 March)

Includes: Course notes and refreshments

Limit: 50 people

Content: 1.5 CEU

This course is designed for exploration geologists, but addresses topics of interest to development geologists, engineers, managers and investors seeking a better understanding of shale resource plays.

The objective of this course is to explain basic techniques and applications of organic and inorganic geochemistry in the evaluation of shale resources for commercial hydrocarbons, either oil or gas. This course details the analytical techniques and resulting data with proper interpretation to enable assessment of unconventional shale resource prospects and plays for their gas or oil prospectivity. This course focuses on prediction

of factors that impact the likelihood of successful completion of these resources.

Techniques and interpretation of data for both shale oil and shale gas reservoir evaluation will be included in this course. Topics in organic geochemistry include basic screening analyses to assess organic richness, kerogen type and thermal maturity as well as detailed analyses such as residual oil composition, gas composition, and carbon and hydrogen isotopes. Comparison to well logs will also be included for select well data. Additional topics include mineralogical and microscopic (including SEM) analyses of shales as well as petrological and rock mechanic assessments. For potential shale gas reservoirs, gas contents and carbon isotopes will be fully explained and discussed. For prospective shale oil reservoirs, prediction of oil quality in terms of API gravity and viscosity will be presented. Also included are recommended designs for archived and new well analyses.

Approaches to geological reconnaissance and mapping of various parameters are also discussed and presented. Data from various shale resource basins in the U.S. and Canada are presented and compared with any available production results. Additional guest lecturers will be included as topical speakers. These speakers will be giving 30- to 60-minute talks specializing in different aspects of shale assessment and performance. These will be experts in gas desorption, petrography, mineralogy, SEM, rock mechanics and stimulation.

Pre-Convention Short Course 4

AAPG Student Chapter (AAPG-SC/SEPM)

Geology and Geophysics Applied in Industry

Date: Sunday, 11 April

Time: 8:00 a.m. – 5:00 p.m.

Location: Ernest N. Morial Convention Center

Instructor: Fred W. Schroeder (ExxonMobil Upstream Research, Retiree, Houston, TX)

Fee: \$20 (Students and Faculty Advisors only)

Includes: Course notes, lunch and refreshments

Limit: 32 people

This course is designed to give graduate students and seniors majoring in the geosciences insights into how geology and geophysics are applied within the energy industry. Through a combination of short lectures and hands-on exercises, we will look at:

- The focus of industry
- The basics of prospecting
- Fundamentals of the seismic method
- Well-seismic ties
- Structural analysis of seismic data
- Stratigraphic analysis of seismic data
- DHI analysis

During the last 30 minutes, we will discuss career opportunities in the energy industry.

Note: This short course can be bought as a package with the AAPG-SC/SEPM Field Trip for only \$35.



SHORT COURSES

Pre-Convention Short Course 5

Energy Minerals Division (EMD)

Fundamentals of Gas Hydrate Resource Evaluation

Date: Saturday, 10 April

Time: 8:00 a.m. – 5:00 p.m.

Location: Ernest N. Morial Convention Center

Instructors: Art Johnson (Hydrate Energy International, Kenner, LA) and Tim Collett (U.S. Geological Survey, Denver, CO)

Fee: Professionals \$125
Students \$63 (limited)

Includes: Course notes and refreshments
Limit: 30 people

Gas hydrates occur at many sites along continental margins and in the Arctic, and much has been learned in recent years regarding their origin, their occurrence and the possibility of using this vast resource in the world energy mix. Only a small fraction of the gas hydrate in the world is concentrated in reservoirs where commercial recovery may be viable, yet the estimates of global gas hydrate abundance are so large that even this fraction represents a vast new frontier for exploration and development.

This one-day workshop provides a solid understanding of the occurrence of gas hydrate in nature, focusing on the geologic controls on gas hydrate formation and the implications of those controls on resource assessment. The course will give guidance on formation evaluation with application to both deepwater and permafrost areas, with focus on recently completed gas hydrate drilling/frilling projects in northern Alaska and the Gulf of Mexico. Participants will gain an understanding of the inherent variability of gas hydrate accumulations through the analysis of numerous representative gas hydrate accumulations throughout the world. Other topics include the uses and limitations of geophysical methods, gas hydrate prospecting approaches, production scenarios and ongoing domestic and international gas hydrate assessment activities.

Pre-Convention Short Course 6

Society for Sedimentary Geology (SEPM)

Sequence Stratigraphy for Graduate Students

Dates: Saturday, 10 April – Sunday, 11 April

Time: 8:00 a.m. – 5:00 p.m.

Location: JW Marriott New Orleans

Instructors: Vitor Abreu and Jack Neal (ExxonMobil Exploration Company, Houston, TX)

Fee: \$10 (Graduate Students only)

Includes: SEPM Student Membership, \$20 SEPM book coupon, course notes, lunch and refreshments

Limit: 40 people

Content: 16 PDH; 1.6 CEU

Designed for the graduate student in geoscience who needs to better understand theory and application of sequence stratigraphy. This course is designed to teach graduate students the

principles, concepts and methods of sequence stratigraphy. Sequence stratigraphy is an informal chronostratigraphic methodology that uses stratal surfaces to subdivide the stratigraphic record. This methodology allows the identification of coeval facies, documents the time-transgressive nature of classic lithostratigraphic units and provides geoscientists with an additional way to analyze and subdivide the stratigraphic record.

Using exercises that utilize outcrop, core, well log and seismic data, the course provides a hands-on experience to learning sequence stratigraphy. The exercises include classic case studies from which many sequence stratigraphic concepts were originally developed. The main objectives of the course are to review:

- Basic concepts and terminology of sequence stratigraphy
- The stratigraphic building blocks of depositional sequences
- Recognition criteria for the identification of depositional sequences and their components in outcrops, cores, well logs and seismic
- The application of sequence stratigraphy in non-marine, shallow marine and submarine depositional settings

Pre-Convention Short Course 7

Society for Sedimentary Geology (SEPM)

3-D Seismic Interpretation for Geologists

Dates: Saturday, 10 April – Sunday, 11 April

Time: 8:00 a.m. – 5:00 p.m.

Location: TBA (SEPM Hotel)

Instructor: Bruce Hart (ConocoPhillips, Houston, TX)

Fee: Professionals \$300
Students (limited) \$150

Includes: Course notes and refreshments

Limit: 45 people

Content: 16 PDH; 1.6 CEU

This course is designed for geologists involved in using or reviewing 3-D seismic data.

This course teaches participants about the principles of 3-D seismic interpretation. The content and level of instruction are scaled to participants' level of familiarity with the technology. By the end of the course, participants will understand:

- The physical basis of the seismic method
- The differences between 2-D and 3-D acquisition, processing and interpretation workflows
- How choices made during acquisition and processing affect data interpretability
- How 3-D seismic data are interpreted and integrated with other data types

Course includes lectures and some in-class problems. Some of the topics to be covered are:

- The 3-D seismic revolution — history and methods
- Physical basis of reflection seismology — seismic waves, reflectors, and rock properties
- 2-D seismic acquisition and processing
- 3-D seismic acquisition, processing and display

- Interpreting stratigraphic, structural and rock-property information from 3-D seismic data and time-lapse ("4-D") seismic methods

Selected case studies will be used to illustrate the concepts, including:

- Stratigraphic control on production from a basin-centered gas accumulation, Deep Basin, Alberta
- Fault-controlled diagenesis in a hydrothermal dolomite reservoir, Appalachian Basin

Pre-Convention Short Course 8

Society for Sedimentary Geology (SEPM)

Sequence-Stratigraphic Analysis of Shales: Key to Paleoclimate Archives, Subsurface Fluid Flow and Hydrocarbon Source, Reservoir and Seal

Date: Saturday, 10 April

Time: 8:00 a.m. – 5:00 p.m.

Location: JW Marriott New Orleans

Instructors: Kevin M. Bohacs, Remus Lazar (ExxonMobil Upstream Research Company, Houston, TX), Juergen Schieber (Indiana University, Bloomington, IN), Joe MacQuaker (Memorial University, Newfoundland)

Fee: Professionals \$225
Students (limited) \$112

Includes: Course exercises, reference papers and handouts, refreshments and lunch

Limit: 60 people

Content: 8 PDH; 0.8 CEU

This course is designed for geologists who interpret fine-grained rocks, explore for or develop conventional hydrocarbons, shale gas or oil shale.

Mudstones contain the most detailed records of earth history and are sources, reservoirs and seals of hydrocarbons, as well as serving as key elements in reservoir and aquifer models as baffles and barriers. Sequence stratigraphy provides an excellent framework within which to integrate the many scales of observations of physical, chemical and biological attributes necessary to understand these rocks across the spectrum of depositional settings. This workshop combines interactive lectures and exercises addressing the expression of depositional sequences in mudstones on seismic, well-log, core and outcrop data. Examples include the New Albany Shale, Barnett Shale, Shublik Formation, Kimmeridge Formation, Kingak Formation, Hue Shale, Mowry Shale and Monterey Formation.

Participants will practice recognition and correlation of significant stratigraphic packages through seismic stratigraphy, stacking pattern analysis of well-log, core and outcrop data, shale sedimentology, thin-section and geochemical data.

Although flooding surfaces and depositional-sequence boundaries may be subtly expressed in mudstones, they can be recognized through distinct changes observed in commonly available physical, chemical and biological data. Beyond the chronostratigraphic utility of the correlative



SHORT COURSES

conformity, abundant paleoenvironmental information is recorded in fine-grained strata — depositional sequences do not just fade away into obscurity in distal reaches, but have objective attributes that allow extension of stratigraphic frameworks and play-element predictions over very large areas.

Flooding surfaces fundamentally record a critical increase in accommodation relative to sediment supply, commonly recorded in mudstones by laterally extensive accumulations of authigenic and pelagic components, along with evidence of sediment starvation and low bottom-energy levels. Even in mudstones, some may record minor erosion, reworking and lag formation due to low sediment supply, but all are marked by a significant decrease in advected clastic input — contrasting with sequence boundaries.

Depositional-sequence boundaries record a critical decrease in accommodation relative to sediment supply, commonly accompanied by an increase in depositional energy or a significant change in sediment supply — or both — over hundreds to thousands of square kilometers in both fine- and coarse-grained lithologies. This is recorded even in fine-grained lithofacies by regional erosional truncation with subsequent onlap, exposure, reworked fossils, decreased continuity at lamina to bedset scale, along with increased accumulations of advected clastics and fossils or secular changes in biogenic lithology. All of these attributes (except subaerial exposure) are observed in physically correlative distal reaches of unconformities across their correlative conformities.

Interactions of sediment supply and accommodation with pre-existing topography control the expression of depositional sequences. Marine environments tend to have the most widespread, gradually varying facies tracts, whereas paralic facies tracts tend to be most localized and abruptly changing. Lacustrine sequences vary according to lake-basin type, and range from very similar to shallow-marine siliciclastic sequences to very dissimilar.

Pre-Convention Short Course 9

Society for Sedimentary Geology (SEPM)

Evolution of Neogene Mixed Carbonate-Siliciclastic Systems

Date: Sunday, 11 April
Time: 8:00 a.m. – 5:00 p.m.
Location: JW Marriott New Orleans
Instructor: André W. Droxler (Rice University, Houston, TX)
Fee: Professionals \$250
 Students (limited) \$125
Includes: Course notes, exercises and refreshments
Limit: 50 people
Content: 8 PDH; 0.8 CEU

This course will be beneficial to geologists, geophysicists and engineers who work exploration or development of mixed carbonate and siliciclastic continental margins.

Mixed carbonate-siliciclastic systems are sedimentary environments characterized by lateral juxtaposition and/or vertical stacking of carbonate and siliciclastic sediments. These systems provide important information for understanding sediment origin, transport pathways and ultimate sinks during different periods of the Earth's evolution. In many cases, spatial and temporal interactions of carbonate and siliciclastic sediments in the mixed systems can provide significantly more information on such processes as eustatic sea level fluctuations, global and regional tectonics and climate than studying either pure carbonate or pure siliciclastic systems.

This course will help geologists, geophysicists and engineers understand the evolution through time of Neogene mixed carbonate and siliciclastic depositional environments as analogs for subsurface studies and in the context of well-established Plio-Pleistocene eustatic sea level fluctuations, global and regional climatic changes and history of regional tectonic activity. The course will be illustrated mostly based upon recent sedimentary and seismic studies of mixed margins in the Gulf of Papua and Central Belize. Models and concepts described in the course will be applicable to understand the short and long term evolution of most mixed carbonate siliciclastic passive margins.

Pre-Convention Short Course 10

Society of Exploration Geophysicists (SEG)

Reservoir Geophysics: Applications

Date: Sunday, 11 April
Time: 8:00 a.m. – 5:00 p.m. (registration and breakfast available at 7:00 a.m.)
Location: Ernest N. Morial Convention Center
Instructor: William Abriel, 2008 SEG/EAGE Distinguished Instructor
Fee: SEG or AAPG Members \$495 (increases to \$530 after 10 March)
 Non-members (includes SEG membership) \$585 (increases to \$620 after 10 March)
 Students (limited) \$25 (increases to \$60 after 10 March)
Includes: A copy of the 2008 DISC book, *Reservoir Geophysics: Applications*, by William Abriel, continental breakfast and refreshments
Limit: 60 people

The objective of the course is to demonstrate how and why geophysics adds value in reservoir management using examples from multiple geological environments (deepwater turbidites, onshore fluvial, near shore deltaics and carbonates). The course is designed to examine and illustrate the dependencies of geology and engineering data on geophysical applications during reservoir management and to expose the viewer to the variety of geophysical tools used in reservoir work. The viewer will become familiar with the application and value of geophysics for users (customers) as well as the inherent risks and uncertainties. This course will be of interest to geophysicists of all backgrounds who are or will be supporting delineation, development and/

or production of oil and gas fields. This includes interpreters, processors, researchers and service employees.

To register, contact SEG:
<http://www.seg.org/SEGportalWEBproject/prod/SEG-Education/Documents/AbrielcourseNewOrleansRegForm.pdf>

Post-Convention Short Course 11

Division of Professional Affairs (DPA)

Reservoir Engineering for Geologists

Date: Thursday, 15 April
Time: 8:00 a.m. – 5:00 p.m.
Location: Ernest N. Morial Convention Center
Instructor: Stephen Norris (J-W Operating Company, Centennial, CO)
Fee: Professionals \$132
 Students (limited) \$66
Includes: Course notes and refreshments
Limit: 80 people

This course is designed for geologists (and others) who wish to have a basic understanding of common reservoir engineering methods and practices. At the conclusion of this course, for under-saturated oil reservoirs without water drive and volumetric gas reservoirs, the participants will be able to: calculate oil or gas in place; obtain oil and gas fluid properties from correlations; calculate EUR (estimated ultimate recovery) from production data using common decline curve analysis methods; compute basic economic parameters and cash flow; and participate in reserves discussions. Topics include:

- Basic methods for computing oil and gas in place will be covered, including volumetric and material balance methods. Correlations for oil and gas properties needed for these calculations will be presented.
- Various methods for production decline analysis will be presented, with special emphasis on tight gas and shale gas reservoirs. New techniques for improving estimated ultimate recovery (EUR) will be discussed.
- Basics of petroleum economics will be presented, including the time value of money, interest calculations, before and after tax cash flow models and discounted cash flow analysis. Economic metrics such as rate of return, net present value, discounted payback period, discounted net to investment ratio and growth rate of return will be discussed.
- A brief discussion of reserve categories and the new SEC rules will conclude the class.

Post-Convention Short Course 12

Division of Professional Affairs (DPA)

Quality Control for Subsurface Maps (QLTs)

Date: Thursday, 15 April
Time: 8:00 a.m. – 5:00 p.m.
Location: Ernest N. Morial Convention Center
Instructor: Daniel (Dan) Tearpock (Subsurface Consultants & Associates LLC, Houston, TX)



SHORT COURSES

Fee: DPA Members \$165
Non DPA Members \$205
Students (limited) \$85
Includes: Course notes and refreshments
Limit: 50 people

Don't be too quick to drill that next dry hole. Success is not the result of serendipity, but is based on solid scientific work. This course addresses the need for a systematic approach for quickly screening interpretations, maps, prospects and potential resources or reserves, and identifying fundamental interpretation, mapping and estimating errors. The reverse applications of methods and techniques as presented in our courses such as Applied Subsurface Geological Mapping and Advanced Structural Geology is the core of this course. The most common errors found on subsurface interpretations and maps are illustrated with numerous examples from around the world.

The course begins with a review of examples of interpretation and mapping errors that led to poorly located wells that are uneconomic or dry, as well as inaccurate reserves or resources estimates. Methods used to address the risk factors that can cause dry holes are reviewed. The participants are then challenged with a series of real exploration and development prospects. The participants are to evaluate each project. After their evaluation, the projects are reviewed and the QC techniques that are applicable to evaluate each project are discussed. A course manual, including the challenging projects with solutions, is provided for their course.

Post-Convention Short Course 13

Petroleum Technology Transfer Council (PTTC)

Enhanced Oil Recovery Through Wettability Alteration and Gas-Assisted Gravity Drainage

Date: Thursday, 15 April
Time: 8:00 a.m. – 5:00 p.m.
Location: Ernest N. Morial Convention Center
Instructor: Dr. Dandina Rao (Louisiana State University, Baton Rouge, LA)
Fee: Professional \$300
Students (limited) \$150
Includes: Course notes and refreshments
Limit: 50 people
Content: 7 PDH

Enhanced oil recovery (EOR) offers significant potential in mature oil fields, both large and small, and can be attractive for the smallest independent to major operators. Understanding wettability and its alteration is essential to evaluating a

reservoir for an EOR process. Material will highlight wettability issues. A major portion of the workshop will focus on gas-assisted gravity drainage (GAGD) as an EOR process. Material will outline the GAGD process itself, key variables and the geological environments/reservoir conditions attractive for the process. The different gases (CO₂, flue gas, N₂, natural gas) that may be used in the GAGD will be discussed. Content will describe the screening that must occur to determine if a reservoir is truly a candidate for effective GAGD.

Dr. Dandina Rao is the Emmett C. Wells Jr. Distinguished Professor, Craft & Hawkins Department of Petroleum Engineering, Louisiana State University. His primary research interests are in reservoir engineering and enhanced oil recovery (EOR). Recent work in EOR has focused on wettability and gas-assisted gravity drainage (GAGD), working with regional independents on a field test of the GAGD process. GAGD is not restricted to a single gas; CO₂, flue gas, and N₂ are options. He has published extensively on wettability and GAGD topics. Rao joined LSU in 1999. He has extensive industry and academic research experience in EOR in both the U.S. and Canada. Rao earned a bachelor's in Technology, Osmania University, India; an M.S. in Chemical Engineering, University of Saskatchewan; and a Ph.D. in Chemical and Petroleum Engineering from the University of Calgary.

Post-Convention Short Course 14

Society for Sedimentary Geology (SEPM)

Deltas: Processes, Stratigraphy and Reservoirs – Core Workshop

Dates: Thursday, 15 April – Friday, 16 April
Time: 8:00 a.m. – 5:00 p.m.
Location: Ernest N. Morial Convention Center
Instructors: Instructors: John Snedden and Rob Wellner (ExxonMobil, Houston, TX) and John Suter (ConocoPhillips, Calgary, Canada)
Fee: Professionals \$335
Students (limited) \$167
Includes: AAPG Getting Started #5 — Deltas, course exercises, reference papers, handouts and refreshments
Limit: 50 people
Content: 16 PDH; 1.6 CEU

Geoscientists responsible for interpreting and mapping lithofacies within deltaic reservoirs and generating stratal architectures for deltaic modeling and subsurface prediction will benefit

from this workshop, as well as graduate and post-graduate students interested in learning about topics spanning the entire spectrum from exploration-scale considerations to production-scale behavior of flow units for both conventional and unconventional hydrocarbon-bearing deltaic reservoirs.

Deltas are extremely important depositional systems and often source and contain prolific hydrocarbon accumulations. This short course will use modern, experimental, outcrop, and subsurface examples to describe the major variables governing the stratigraphic architecture of deltas. Controlling factors discussed will include paleogeography, paleoclimate (high-latitude vs. tropical/temperate), sediment supply and lithology (coarse-grained vs. fine-grained), sequence Stratigraphy and accommodation (lowstand vs. highstand; shelf phase vs. shelf-margin deltas), and depositional environments (active vs. abandoned, river /wave/tide-dominance). Inputs and influences on geomodels, including variations in reservoir geometry, continuity, and heterogeneity, will be a primary focus.

This workshop includes topical lectures, key cores, and a suite of exercises that integrate core, well logs, experimental flume-tank data, and seismic sections to develop identification and subsurface mapping skills within deltaic settings. Exercises include an experimental delta tank exercise and core exercises from modern (Wax Lake Delta of Louisiana), ancient outcrop (Lower Cretaceous Ferron Sandstone and Upper Cretaceous Panther Tongue Sandstone of central Utah), subsurface fields (Vicksburg), and Quaternary (Lagniappe) and ancient (South Timbalier 26) seismic-based exercises.

Participants will gain a full appreciation for the depositional processes associated with all types of deltas, recognition criteria for deltaic facies, insight into typical distributions for these lithofacies, as well as the development of key stratigraphic surfaces that can partition deltaic systems into reservoirs and flow units.