



INTERNATIONAL SCHOOL FOR GEOSCIENCE RESOURCES (IS-Geo)
KOREA INSTITUTE OF GEOSCIENCE AND MINERAL RESOURCES (KIGAM)

INTENSIVE TRAINING COURSE ON Sequence Stratigraphy

The **International School for Geoscience Resources** of KIGAM presents an intensive training course on Sequence Stratigraphy. The course will take place at the Ara room of International School for Geoscience Resources of KIGAM in Daejeon (Korea) in July 22 through July 24, 2013 and will include the following topics:

Title	Date	Instructor
Day 1. Introduction to sequence stratigraphy	July. 22.2013	Christopher Kendall IRCG
Day 2. Siliciclastic sequence stratigraphy	July. 23 .2013	Christopher Kendall IRCG
Day 3. Carbonate sequence stratigraphy	July. 24 .2013	Christopher Kendall IRCG

COURSE INFORMATION

- **Agenda**

Course on sequence stratigraphy that introduces and explains the basic framework of erosional, depositional and non-depositional surfaces and provides detail of the sedimentary fill of this framework. Exercises that provide sequence stratigraphic interpretations of depositional settings, outcrops, well logs, and seismic.

- **Summary**

- Basics and ideal 'sequence'
- Clastic sedimentary response to changing accommodation
- Carbonate sedimentary response to changing accommodation



• Course Covers

- Introduction to chronostratigraphy
- Methods for interpretation of sequences from:
 - Seismic
 - Well log
 - Outcrop
- Exercises for interpretation of sequences from:
 - Seismic
 - Well log
 - Outcrop

• Course Requirements: Prerequisite

- Knowledge of basic sedimentology
- Experience interpreting sedimentary sections
- Course language will be English.

• Who should Attend?

- This course is for geologists or engineers involved in hydrocarbon exploration and exploitation.

• Summary of topic content and learning objectives

- Course introduces the methodology of sequence stratigraphy.
- Lectures and exercises will enable participants to use sequence stratigraphy. subdivides sedimentary section into framework of erosional, depositional and non-depositional surfaces.
- Teaches sequence stratigraphy as a branch of sedimentary stratigraphy.
- Explains how the surfaces are generated when the relative position of the sea changes, enclosing genetically related stratigraphic facies geometries that enable the interpretation and the prediction of extent of sedimentary facies geometry, lithologic character, grain size, sorting and quality of porosity and permeability away from control points.
- Uses the order strata accumulated within a framework of major depositional and erosional surfaces to interpret the depositional setting of clastic and carbonate sediments from continental, marginal marine, basin margins and down-slope settings of basins.
- Shows how to reconstruct depositional settings and paleogeography facilitated by the framework of sequence stratigraphy.
- Participants will become proficient at the complex definition, terminology and interpretation of the surfaces of sequence stratigraphy and will clarify their understanding and use of this discipline of stratigraphy.



- **Day 1. Introduction to sequence stratigraphy**
 - 10:00-10:30 Introduction to sequence stratigraphy, surfaces & exercises outlined.
 - 10:30-11:00 Basics and ideal 'sequence' of Vail et al 1977
 - 11:00-11:30 Siliciclastic sedimentary response to changing sea level
 - 11:30-12:00 Carbonate sedimentary response to changing sea level
 - 12:10-13:10 Lunch
 - 13:10-14:00 Construction of a chronostratigraphic chart (Lab)
 - 14:10-15:00 Seismic stratigraphic interpretation - Tying Well Synthetic to Seismic Line
 - 15:10-16:00 Seismic stratigraphic interpretation - Lower Cretaceous of offshore of South Africa
 - 16:10-17:00 Sequence Stratigraphy and Role of Conceptual Models

- **Day 2. Siliciclastic Sequence Stratigraphy**
 - 10:00-11:00 Outcrop Clastics
 - 11:10-12:10 Sequence Stratigraphy of Clastic Sections - Book Cliffs, Utah (Lab)
 - 12:10-13:10 Lunch
 - 13:10-14:00 Well Logs Clastics
 - 14:10-15:00 Well Log Sequence Stratigraphy - La Pascua Formation, Guarico Sub-Basin Venezuela (Lab)
 - 15:10-16:00 Review of Sequence Stratigraphy Terminology
 - 16:10-17:00 Well Log Sequence Stratigraphy - Venezuela continued (Lab)

- **Day 3. Carbonate Sequence Stratigraphy**
 - Day 3. Carbonate sequence Stratigraphy
 - 10:00-11:00 Outcrop Carbonates
 - 11:10-12:10 Measured Sections at Cap Blanc- Cliffs of Late Miocene Reef Complex (Lab)
 - 12:10-13:10 Lunch
 - 13:10-14:00 Carbonate Hierarchies & Depositional systems
 - 14:10-15:00 Measured Sections at Cap Blanc- Cliffs of Late Miocene Reef Complex (Lab)
 - 15:10-16:00 Delegate examples and discussion
 - 16:10-17:00 Sequence Stratigraphic Framework Applied to Oil Fields



About the instructor – *Dr. Christopher G. St.C. Kendall*



Dr. Christopher G. St.C. Kendall Distinguished Emeritus Professor, Earth & Water Sciences Dept., University South Carolina and a Consulting Geologist, Chief Editor of the SEPM STRATA web site (<http://sepmstrata.org/>).

His professional skills include detailing and predicting surface and subsurface geometries, composition, and textural character of carbonate, evaporite and silici-clastic sedimentary rocks on a local and regional scale for hydrocarbon exploration and reservoir sedimentology and petrology, and civil engineering projects. Consulting experience and research involve high-resolution sequence stratigraphy, facies, petrophysics, and the controls on carbonates, evaporites and clastic systems of the Holocene though

Mesozoic, and Paleozoic, specifically of the Arabian Peninsula and Gulf but also world-wide. Develops computerized sequence stratigraphic simulations of carbonate and clastic systems as they relate to eustatic, tectonic and sedimentation controls. Career has mixed both oil industry and academic studies. Research and teaching involve sedimentary stratigraphy and the effects of relative sea level rise and fall on the sediments of marine and coastal settings and its relationship to the occurrence of petroleum. He is chief editor of the SEPM's STRATA, the world premier web site on sequence and sedimentary stratigraphy with thousands of visitor's worldwide visits each month. He is building and maintaining the site and its focus of short courses he and others teach within the industry and academia <http://sepmstrata.org/>.

Multi authored (with students and colleagues) 454 scientific publications: 8 books; 89 refereed papers; 123 abstracts of talks and posters at national and international meetings; 18 unpublished reports; and 220 published book reviews. Supervised 22 Ph.D., and 23 M.S. students. Directed 1 post-doctoral and two visiting professors; host to dozens of visiting scientists; currently supervising his last doctoral student. Principal and co-principal investigator of a total of 79 grants with a total value of \$7,621,651 and 6 for software at total of \$4,281,720.

His career began in 1962 with a 1st Class Honors degree in Geology and 1965 M.A. from Trinity College, Dublin; 1966 PhD Sedimentology from Imperial College of Science, and Technology, London, U.K.; 1966-68 Dept. Geol. Univ. Texas, Austin, Harkness Post-Doctoral Fellow; 1968-69 Dept. Geol. Univ. Sydney Post-Doctoral Fellow; 1970 Dept. Geol. Ohio State Univ. Assist. Professor; 1970-74 Exxon Production Research, Research; 1974-77 Earth Science Resources, Associate Director of Institute USC; 1977-83 Gulf Research, Pittsburgh; 1983 - Dept. of Geology, USC. Professor Dept. of Geology, USC; 1989 Visiting Scientist at Texaco Research in Houston(May/Aug); 1991-92 Sabbatical as Professor Geology, Uni. Calabria, Cosenza, Italy; 2006-07 The Distinguished Visiting Scientist at Jackson School of Geosciences at the University of Texas. 2009-2010 Consulting under contract with Schlumberger working with the Kuwait Oil company the building of basic sequence stratigraphic models of the Jurassic oil fields for production modeling. 2010-11 External examiner of Petroleum Geoscience Program, Chulalongkorn University, Bangkok, Thailand.

Awarded the SEPM 2010 Distinguished Service Award for the outstanding web-based teaching resource for stratigraphy and sedimentology on the SEPM website; Honored as chair of sequence stratigraphy terminology committee at Oslo International meeting 2008; Distinguished Visiting Scientist at Jackson School of Geosciences at University of Texas (2006-07); Best Poster Presentation award at AAPG/SEPM Annual Meeting, Denver (1985) and Long Beach (2007); University of South Carolina, Intellectual Property Award for Sedpak 4.1.