

Emily Laws Marcantel Stoudt

Senior Instructor, University of Texas Permian Basin, Physical Geology, Sedimentary Geology, Carbonates, Reservoir Characterization

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Education:

1961-1966 Ohio State University; Columbus, Ohio, B.A., Geology
1967-1968 Louisiana State Univ., Baton Rouge, La, M.Sc., Geology
1971-1975 Ohio State University, Columbus, Ohio, Ph.D., Geology

Employment History:

1968-1970 **United States Geological Survey:** Contract Geologist and Petrographer, Denver, Colorado and Cleveland, Ohio
1975-1984 **Getty Oil Company:** Geologist and Petrographer, Getty Research Center, Houston, Texas
1984-1992 **Texaco:** Geologist and Reservoir Geology Manager, Texaco Exploration & Production Technology Department, Houston, Texas
1992-1995 **Texaco:** Senior Research Consultant in Carbonates and Reservoir Geology, Texaco Exploration and Production Technology Department, Houston, Texas
1995- 2002 **Texaco:** Senior Research Consultant in Carbonates and Reservoir Geology, Texaco Midland E & P Division, sole reservoir characterization specialist for Texaco in Midland
2002-2004 **University of Texas Permian Basin:** Adjunct Professor teaching carbonate deposition, petrology and diagenesis, physical geology and other geology courses as needed.
Consultant: self employed part-time performing carbonate analysis and reservoir characterization for petroleum industry clients
2004- **University of Texas Permian Basin:** Full Time Senior Lecturer teaching physical geology, historical geology, paleontology, carbonate deposition, petrology and diagenesis, sedimentary petrology and team-teaching geology of West Texas.

Technical Skills:

Carbonate sedimentology, petrology, depositional systems, diagenesis, reservoir types; sequence stratigraphy with emphasis on carbonates and geologic reservoir characterization. Computer skills include extensive experience in word processing and graphics (Adobe Illustrator, Photoshop, Acrobat; Macromedia Freehand; Denaba Canvas; and creation/use of Photo CD's), intermediate level experience using **geoPlus Petra reservoir characterization software**; excellent writing and public speaking skills (teaching and project presentation); 8 years in middle level management.

Project Experience:

1975-1984 Primary duties were technical, and involved the petrographic and inorganic geochemical analysis of carbonate rocks for purposes of determining depositional and diagenetic histories. This information was used to predict reservoir quality in exploration plays and to develop reservoir models (lateral and vertical porosity and permeability models) for field characterization. Principle study areas included Silurian reefs of the Michigan basin, Jurassic and Cretaceous carbonates of the U.S. Gulf Coast, Cretaceous carbonates of Guatemala, and Permian carbonates of the West Texas/New Mexico Permian Basin. 50 in-house reports were prepared in conjunction with this work.

1984-1991 Primary duties were managerial, and involved supervising 18-20 scientists and technicians working in clastic and carbonate reservoir geology. Carbonate expertise was maintained during this time by reading, team teaching several in-house carbonate courses, and pursuing ongoing projects on the Jurassic Smackover Formation in Hatter's Pond Field, Mobile County Alabama and West Nancy Field, Clarke County, Mississippi

1992-1995 Returned to technical duties; carbonate activities included petrographic studies combined with computer analysis of resulting data for purposes of reservoir modeling and quality prediction. Principle areas of study included the Gulf Coast Jurassic, West Texas Permian and Devonian of Timan Pechora Basin, Russia, as well as numerous consultation projects on carbonates in various parts of the world. Eight in-house reports were completed in conjunction with this work

1995-2001 Transferred from Texaco upstream research facility in Houston to Texaco operating group in Midland as resident carbonate specialist. Duties include describing carbonate cores and placing them in an appropriate sequence stratigraphic, depositional and diagenetic framework for use in reservoir characterization modeling or development of new or ongoing carbonate plays. Cores from the San Andres/Grayburg, Glorieta, Leonard, Abo, Wolfcamp, Strawn, Devonian and Ellenburger have been analysed. Graphic core descriptions, annotated slab photo images and thin section photomicrographs have been provided to operations geoscientists for numerous cored wells. In addition, I have been involved in teaching various carbonate courses for summer interns and Texaco staff, for establishing and maintaining a Midland geoscience and engineering library, and for maintaining the Permian Business Unit's core and cuttings inventory in Midland, Denver, Houston and Schulenburg

2002-Present Hired as senior lecturer at University of Texas of the Permian Basin; teaching duties currently include Physical Geology, Historical Geology and all associated laboratories, Paleontology, Carbonate Rocks, Sedimentary Petrology and Petrography, and team teaching Basic Field Methods and Geology of West Texas

Teaching Experience in Industry:

I have helped to develop and teach the following Texaco-sponsored carbonate courses:

Carbonates as Sediments...Rocks...and Reservoirs = equivalent to a university graduate level carbonate course, includes carbonate components, depositional systems, diagenetic products, and development/destruction of porosity. 10 days in length, including a 3 day field trip to central Texas. First taught in 1980.

Field Seminar in Ancient Carbonates = an advanced field course to study carbonate facies and sequence stratigraphic relationships in three dimensions. Utilizes the outstanding Permian outcrops of the Guadalupe Mountains, West Texas and New Mexico. 6 days in length. First taught in 1986

Carbonates in Exploration and Exploitation = a shortened version of the "Carbonates as Sediments" course, designed for non geologists. 5 days in length, including a 1 day field trip. First taught in 1991.

Reservoir Management Training Program = team teach the carbonate classroom and field trip parts of this extensive training program for producing geologists and engineers. 7 days, First taught in 1991.

Carbonate Sequence Stratigraphy = taught in both field and classroom settings, using the Guadalupe Mountains of West Texas/New Mexico as a laboratory to illustrate carbonate and carbonate/ clastic sequence stratigraphic concepts. Emphasizes the location and geometry of carbonate reservoirs and seals in a sequence stratigraphic framework. 5 days, First taught in 1993

Introduction to Exploration & Production Geologic Concepts in the Permian Basin = a three to five day field course and workshop held in the Guadalupe Mountains of West Texas and New Mexico. Designed for summer interns and new hires to both introduce them to Permian Basin geology and to get them to use concepts of ramp to rimmed shelf carbonate modeling to solve the types of problems they might encounter as petroleum geologists

Geologic Introduction for Non-Geologists = a two day short course in the Guadalupe Mountains for high school employees and non-geoscientists to introduce them to concepts of geology and how it is used to find oil and gas

Professional Organizations:

American Association of Petroleum Geologists (AAPG)

Society of Economic Paleontologists and Mineralogists (SEPM)

SEPM Secretary /Treasurer, 1992-1994

West Texas Geological Society

Permian Basin Section-SEPM

Treasurer, 1998-1999

First Vice President, 2000-2001

President-Elect, 2001-2002

President, 2002-2003

Publications:

Stoudt, E.L. and M. A. Raines, in press, Reservoir characterization in the San Andres Formation of Vacuum field, Lea County, New Mexico – another use of the San Andres Algerita outcrop model for improved reservoir description in Integration of Outcrop and Modern Analogs *in* Reservoir Modeling, Grammer, G.M., Harris, P. M., and Eberli, G. P., (eds). American Association of Petroleum Geologists Memoir.

Stoudt, E. L. and D. J. Sivils, 2001, Wolfcamp Carbonate Debris Flows and Distal Turbidites from the Western Margin of the Midland Basin, Exxon R. D. Johnson #1 Well, Upton, County, Texas *in* Wolfcampian of West Texas (Permian Basin, Sierra Diablo and Hueco Mountains) – Shelfal and Periplatform Carbonate Reservoirs and Outcrop Analogs, Stoudt, El L. and Sivils, D. J., (eds), Core Workshop and Field Trip Guidebook, Permian Basin Section, SEPM, 2001, p 7-1-7-5.

Stoudt, E. L., D. R. Prezbindowski and D. J. Sivils, 2001, Phillips Edwards West Field, Ector County Texas and Costilla Buffalo Ridge and Darlin Fields, Crane County, Texas – Controls on Reservoir Distribution in Wolfcamp Shelfal Carbonates *in* Wolfcampian of West Texas (Permian Basin, Sierra Diablo and Hueco Mountains) – Shelfal and Periplatform Carbonate Reservoirs and Outcrop Analogs, Stoudt, El L. and Sivils, D. J., (eds), Core Workshop and Field Trip Guidebook, Permian Basin Section, SEPM, 2001, p 6-1-6-10.

Sivils, D. J. and E. L. Stoudt, 2001, Basinal Wolfcampian Carbonate Debris Flow, Midland Basin, Texas *in* Wolfcampian of West Texas (Permian Basin, Sierra Diablo and Hueco Mountains) – Shelfal and Periplatform Carbonate Reservoirs and Outcrop Analogs, Stoudt, El L. and Sivils, D. J., (eds), Core Workshop and Field Trip Guidebook, Permian Basin Section, SEPM, 2001, p 4-1 – 4-2.

Stoudt, E. L. and M. A. Raines, 2001, Reservoir Compartmentalization in the San Andres Formation of Vacuum Field, Lea County, New Mexico—Peritidal Deposits and Karst Overprints Create Vertical and Lateral Barriers to Fluid Flow in Carbonate Platform Dolopackstones and Dolograinstones *in* AAPG Bulletin, V. 85, no. 2, p. 390 (Abstract for SWS AAPG annual meeting)

Stoudt, E. L., 2000, Summery of Ancient Carbonate Slope Outcrops – Comparison to Modern Slope Deposits and Potential as Hydrocarbon Reservoirs *in* American Association of Petroleum Geologists 2000 Annual Meeting Abstracts with Programs.

Stoudt, E. L. and M. A. Raines, 2000, Reservoir Characterization in the San Andres formation of Vacuum field, Lea County, New Mexico – another use of the San Andres Algerita Outcrop Model for reservoir description *in* American Association of Petroleum Geologists 2000 Annual Meeting Abstracts with Programs.

Stoudt, E. L., 1998, Productive Carbonate Debris Flows (Resedimented Carbonates) from Leonardian Deposits of the Eastern Midland Basin, Glasscock County, Texas *in* Cored Reservoir Examples from Upper Pennsylvanian & Lower Permian Carbonate Margins, Slopes and Basinal Sandstones, Winfree, Keith (ed), West Texas Geological Society Publication No. 98-103.

Ginger, E. P., A. R. Thomas, W. D. George, and E. L. Stoudt, 1995, Reservoir Characterization and Modeling of the Jurassic Smackover and Norphlet Formations, Hatter's Pond Unit, Mobile County, Alabama *in* Hydrocarbon Reservoir Characterization Geologic Framework and Flow Unit Modeling, Stoudt, E. L. and P. M. Harris (eds.), SEPM Short Course No.34, Houston, Texas, pp. 227-316.

Kirkland, B., Longacre, S. A., and E. L. Stoudt, 1993, Reef *in* Guide to the Permian Reef Geology Trail, McKittrick Canyon, Guadalupe Mountains National Park, West Texas, Bebout, D. G. and C. Kerans (eds.), Bureau of Economic Geology Guidebook 26, Austin, Texas, pp. 23-31.

Kirkland, B., S. A. Longacre, and E. L. Stoudt, 1993, Permian Reef Geology Trail Guide, McKittrick Canyon, Guadalupe Mountains National Park, West Texas; Reef Facies, *in* American Association of Petroleum Geologists Southwest Section Abstracts with Programs, 1993 Southwest Section Meeting, Fort Worth, Texas, pp.138-139 (Abstract)

Kirkland, B., S.A.Longacre, and E.L. Stoudt, 1992, Permian Reef Geology Trail Guide, McKittrick Canyon, Guadalupe Mountains National Park, West Texas; Reef Facies, *in* Permian Basin Exploration and Production Strategies; Applications of Sequence Stratigraphic and Reservoir Characterization Concepts, Mruk, D.H. and B. C. Curran (eds.), West Texas Geological Society Pub. 92-91, Midland, Texas, p.199 (Abstract)

Stoudt, E.L., A.R. Thomas, E.P. Ginger, and R.J. Vinopal, 1992, Geologic Reservoir Characterization for Engineering Simulation, Hatter's Pond Field, Mobile County, Alabama, *in* Society of Petroleum Engineers Annual Technical Conference and Exhibition Proceedings, Volume Ω Formation Evaluation and Reservoir Geology, 1992 Annual Meeting, Washington, DC, pp.521-534.

Kirkland, B., S. A. Longacre, and E.L. Stoudt, 1992, The Capitan Massive (Reef) Facies, Permian Reef Geology Trail Guide, McKittrick Canyon, Guadalupe Mountains, West Texas & New Mexico *in* American Association of Petroleum Geologists Abstracts with Programs, 1992 Annual Meeting, Calgary, Canada, p. 66 (Abstract)

Stoudt, E.L., 1979, Smackover Formation of Gulf Coast Region *in* American Association of Petroleum Geologists Bulletin, vol. 63, no. 3, pp. 534-535 (Annual Meeting Abstract)

Marcantel, E. L., 1969, The Skelly-Hobbs Rudist Reef Complex *in* Depositional Environments and Depositional History, Lower Cretaceous Shallow Shelf Carbonates, West Central Texas, C. H. Moore, Jr., (ed.), AAPG Annual Meeting Field Trip Guidebook, Dallas Geological Society, pp. 19-35.

Personal:

Married 29 years, 2 adult children, 1 granddaughter, 1 grandson