

# GCAGS Journal

**A Publication of the  
Gulf Coast Association of Geological Societies**  
(A Section of the American Association of Petroleum Geologists)

**Volume 9  
2020**

**Editor**

**Robert K. Merrill**

**Managing Editor**

**James J. Willis**

**Associate Editors**

**Jeff McCartney, Chandler Wilhelm, Jesus Ochoa,  
Eugene Szymanski, Jennifer Gildwell-Graf, and Haoran Xia**



**GCAGS  
JOURNAL**

# GCAGS Journal, Vol. 9 (2020)

Copyright © 2020  
Gulf Coast Association of Geological Societies  
All rights reserved.

ISBN 978-0-9883883-9-0

Printed September 2020.

## Special Fair Use Permission

If you want to use a single figure, a brief paragraph, or a single table from the *GCAGS Journal* in a paper in another publication, GCAGS considers this to be fair usage, and you need no formal permission. In that case, you should print a copy of this document and present it to your publisher. You are, however, required to provide proper citation (see Condition of Grant of Permission below). Permission for more extensive reproduction of GCAGS material can be requested from the Executive Director or Managing Editor (see [www.gcags.org](http://www.gcags.org)).

## Condition of Grant of Permission

As a condition of the grant of permission contained under the **single use only or multiple item usage**, GCAGS requires: (1) a full citation in your bibliography for each GCAGS publication from which a table or figure or text is taken; and (2) a statement or citation in figure and title captions, including (a) the author name(s) and year of original publication, followed by (b) an appropriate phrasing acknowledging the granting of permission (e.g., “*reprinted with permission of GCAGS*” or “*courtesy of GCAGS*.”

**Cover:** Scanning electron microscope energy-dispersive spectrometry images of Austin Chalk lithofacies samples, onshore Gulf of Mexico. For more information, please see Loucks et al. paper herein.

# CONTENTS

<b>Mineralogy of the Upper Cretaceous Austin Chalk Group along the Onshore Gulf of Mexico .....</b>	<b>1</b>
<i>Robert G. Loucks, Josh R. Lambert, Kim Patty, Toti E. Larson, Robert M. Reed, and Christopher K. Zahm</i>	
<b>Scanning Electron Microscope Petrographic Differentiation among Different Types of Pores Associated with Organic Matter in Mudrocks .....</b>	<b>17</b>
<i>Robert M. Reed, Robert G. Loucks, and Lucy T. Ko</i>	
<b>Integrated Carbonate Reservoir Analysis and Modeling, Upper Jurassic Smackover Formation, Fishpond Field, Southwestern Alabama, Northeastern Gulf Coastal Plain.....</b>	<b>28</b>
<i>Alexander Owen, Ernest A. Mancini, D. Joe Benson, Berry H. Tew, Jr., and Ibrahim Çemen</i>	
<b>The Midway to Carrizo Succession in the Southeastern Texas Gulf Coast: Evolution of a Tidally-Influenced Coastline .....</b>	<b>41</b>
<i>William A. Ambrose, Peter Flaig, Jinyu Zhang, Mariana I. Olariu, Chris Denison, Thomas Demchuk, and Jennifer O’Keefe</i>	
<b>A Reevaluation of the Lithostratigraphy and Facies of the Lower Cretaceous Hensel Sand–Lower Glen Rose Transition, Comanchean Shelf, Blanco and Hays Counties, Central Texas .....</b>	<b>76</b>
<i>Alex S. Broun, Brian. B. Hunt, Jeffery A. Watson, and Douglas A. Wierman</i>	
<b>Analytics, Machine Learning, and AI for Independent Petroleum Geologists and Independent Oil and Gas Companies: Successful Case Study, Rodessa Oil Pool, Martinville Field, Simpson County, Mississippi.....</b>	<b>93</b>
<i>Bill Fairhurst</i>	
<b>Lithofacies and Diagenetic Features of Strawn Carbonates in the Subsurface of North-Central Texas: Implications to Controls on Reservoir Quality .....</b>	<b>115</b>
<i>Qilong Fu and William A. Ambrose</i>	

**GCAGS Executive Committee (2019–2020)**

President .....	Travis Helms
Vice President.....	Mark Shuster
General Chairman.....	James Willis
Treasurer.....	Bryan Guzman
Past President.....	Deborah Sacrey
Executive Director.....	Kate Kipper

**GCAGS Journal Editorial Board (2019–2020)**

**Editor**

Robert K. Merrill, Catheart Energy, Inc., Sugar Land, Texas

**Managing Editor**

James J. Willis, Willis School of Applied Geoscience, St. Martinville, Louisiana

**Associate Editors**

Jeff McCartney, McCartney Cavern Consulting LLC, Conroe, Texas

Chandler Wilhelm, Wilhelm Geoscience Services LLC, Houston, Texas

Jesus Ochoa, Equinor, Austin, Texas

Eugene Szymanski, Chevron Energy Technology Company, Houston, Texas

Jennifer Gildwell-Graf, Consultant, Houston, Texas

Haoran Xia, Chevron Energy Technology Company, Houston, Texas

