

GCAGS Journal

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(A Section of the American Association of Petroleum Geologists)

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Cover: Outcrop exposure of the Eagle Ford Group in Lozier Canyon, Terrell County, Texas. The underlying Buda Limestone forms the resistant light-colored outcrops near the valley floor, and the overlying Austin Chalk forms the resistant cap. The Lozier Canyon locality provides a remarkable exposure of the entire Eagle Ford section, providing key insight into the South Texas Eagle Ford oil and gas play. See Donovan et al. herein for additional details. Photo courtesy of A. D. Donovan.

FOREWORD



For the past century, the geology of the Gulf of Mexico has been of high interest to the oil and gas community—from ever-deeper water offshore and ever-deeper rocks onshore; to above salt, near salt, and below salt; from porous sandstone and carbonate, to tight sandstone and carbonate, to coal and shale; and from the shelf, to the slope, and to the basin. Ever since the earliest onshore oil and gas fields were discovered, advances in technology, evolving geologic concepts and ideas, and the expectation of a profitable long-term oil price have combined to deliver significant progress in geologic understanding, advanced technology, and volume of proven reserves. As a result, and contrary to frequent proclamations of its impending demise, the Gulf region continues to help satisfy the world’s growing demands for energy.

Since 1951, the Gulf Coast Association of Geological Societies has been there. Its thirteen member societies gather at the annual convention to talk about geology, share ideas, create new relationships, and publish the technical contributions in the *GCAGS Transactions*, a remarkable record of professional impact.

In 2002, I served as the Technical Program Chairman for the annual GCAGS Convention when the Austin Geological Society (AGS) hosted the meeting in Austin. I had been Director of the Bureau of Economic Geology for only a few years, and at the time a Bureau team was working with PEMEX, characterizing several of the shallow-water basins off the Mexican coast. I recall a GCAGS planning meeting at the Bureau in which I asked then-GCAGS President Pete Rose, “Why isn’t Mexico in the GCAGS?” Well, a year later, thanks to the efforts of Pete and many others, *Asociación Mexicana de Geólogos Petroleros* (AMPG) joined the GCAGS representing Mexico, and for the first time the GCAGS represented in its membership the contiguous Gulf of Mexico! It was also in my role as Technical Program Chairman in 2002 that I began to think about what it would take to incorporate formal peer review into the GCAGS publications.

Fast-forward a decade to 2012 and the AGS will again host the annual convention of the GCAGS. In my role as president, I met with Tucker Hentz, *Transactions* Editor, for several early brainstorming sessions to consider the possibility of formal peer review. We agreed on several guiding principles, including: (1) do not harm the *Transactions*, (2) establish a schedule that will produce an annual publication, (3) do not overburden the host society with cost or commitment of time, (4) be sure our process is recognized as legitimate peer review, and (5) seek high-quality manuscripts that might not otherwise have come to the GCAGS. We concluded that the best option was a stand-alone publication separate from the *Transactions*. Therefore, we proposed to the GCAGS Board of Directors the idea of an annual, hard-bound collection of 10 to 20 articles of Gulf Coast geology.

There was extensive, healthy conversation by the GCAGS Board of Directors, and in the end the annual *GCAGS Journal* was approved. We put together an excellent editorial board, and Tucker agreed to serve as the first editor. I agreed to raise money to sponsor the *Journal* for at least three years. We decided to charge a nominal amount for the publication. Then we held our breath.

The results are in. Volume 1 of the *GCAGS Journal* before you went from submission, through rigorous peer review and editing, to publication within less than a year. The *Transactions* is as healthy as ever and, given the strong author interest in the *Journal* that has spilled over to the *Transactions*, perhaps even better. The editorial team is of highest caliber, representing the GCAGS broadly, and is serving three-year terms with the option to renew. Shell stepped up to sponsor the cost of the *Journal* and is a lead candidate to continue that role in the future. Importantly, the combination of a multi-year editorial team and sponsorship removes a burden from the next convention’s host society.

I am very proud of the team that made this initial *Journal* volume happen, and I am hopeful that it will be followed by another each year for decades to come. Gulf of Mexico geology deserves no less!

A handwritten signature in black ink that reads "Scott W. Tinker". The signature is fluid and cursive.

Scott W. Tinker
GCAGS President (2011–2012)

ACKNOWLEDGMENTS

The *GCAGS Journal* would not have come to fruition without the determination and vision of the current GCAGS Board of Directors. Opinions differed among the members regarding the form and substance of the *Journal*, but in the end the decision was made to create the new peer-reviewed periodical now in your hands. The Editorial Board of the *Journal* expresses its most sincere appreciation to all the peer reviewers who graciously agreed to devote the time necessary to evaluate all the papers submitted for publication. In most cases, the turn-around period for review was limited due to the broader time constraints of publishing this volume in time for the Convention. The quality of the final 13 articles in this volume is due in large part to their efforts. Special thanks are extended to Sara Clough, whose assistance in the management of digital submissions was invaluable. Finally, all involved in the development and publishing of this inaugural issue of the *Journal* owe a debt of gratitude to Shell Energy Resources Company for their considerable financial support.

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Shell

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PREFACE



This inaugural volume of the *GCAGS Journal* is the end product of the association's concerted effort in recent years to advance the stature of the annual convention's published full-length articles from "gray literature" to formally peer-reviewed publications. GCAGS officers and members of its local geological societies have long and enthusiastically advocated an internal publication that will help authors achieve promotion, tenure, and personal satisfaction by having their articles formally vetted by their peers.

In response to this longstanding aspiration, the GCAGS Board of Directors, at their late-October 2011 meeting, approved the *Journal* proposed by GCAGS President Scott Tinker. The board authorized an independent editorial board to oversee the publication process, in line with the procedure used by international geoscientific journals and other periodicals of note.

The *Journal's* editorial board was purposely selected to comprise individuals with a variety of geologic specialties from several GCAGS member societies and the Gulf Coast Section of the Society of Economic Paleontologists and Mineralogists. Editorial board members serve 3-year renewable terms, thus eliminating or at least minimizing the burden on a local host society for production of the *Journal* volume each year. The prime objective of the *Journal* is to feature some of the many significant and timely geoscientific studies presented at each convention, thus complementing, but not overshadowing, the annual *GCAGS Transactions* volume. The intent of all involved in the conception of this new GCAGS publication is to give contributors to the annual conventions two choices: submit a traditional, editor-reviewed *Transactions* article (or extended abstract) or write a more rigorously reviewed and generally more in-depth manuscript for the *Journal*. Both offer the advantage of relatively rapid publication turn-around (less than a year) to better meet the varying needs and objectives of company geoscientists, consultants, and academics who are the core members of the association.

A total of 51 abstracts were originally submitted for consideration to be expanded into articles for this first volume of the *Journal*. The editorial board chose 19 of the abstracts for potential publication, and after the peer-review process, 13 articles were accepted for publication. This was truly a selective process! The resulting articles represent areas of some of the most focused research by workers in the greater Gulf of Mexico region. Article topics include insights into the burial, thermal, and depositional history of unconventional hydrocarbon reservoirs (Eoff, Nunn); historic shoreline changes to the Texas Gulf Coast (Paine et al.); regional Miocene deepwater fan deposition (Snedden et al.); outcrop characteristics of the Eagle Ford Shale (Donovan et al.); salt tectonics and its effects on gas-hydrate occurrence (Lewis and Sager); structural evolution of producing and non-producing regions in the Gulf Coast area (Ajiboye and Nagihara, Pearson et al., Robinson et al.); effects of changing position of the hydrologic divide on producibility of the Edwards Aquifer of Texas (Smith et al.); demands of the Texas oil and gas industries on fresh-water aquifers (Nicot); the KT boundary in east-central Texas (Hart et al.); and modeling of the regional geopressure gradient and characterization of the regional pressure system of the onshore and offshore parts of the Gulf of Mexico (Burke et al.).

Instead of covering a range of topics as in this volume, future *Journal* volumes could be thematic, with submitted and invited articles concentrating on a single area of study. In a similar vein, other issues could memorialize the specialized research of a prominent geologist and, if an academic, his or her students. Other options certainly exist, and I welcome your ideas. The *Journal* is first and foremost a product of GCAGS members, and it is now the only periodical devoted specifically to geoscientific aspects of the greater Gulf of Mexico region. I believe we can justifiably take great pride in this inaugural issue and in all that follow.

A handwritten signature in black ink that reads "Tucker F. Hentz". The signature is fluid and cursive, with the first name being the most prominent.

Tucker F. Hentz
Editor

