

MISSISSIPPI GEOLOGICAL SOCIETY

*e***BULLETIN**

Volume 73

No. 6

February 2025



OneNEXUS

Matt Lee - Lockton Companies

**MDEQ DRILLING CREW, DRILLING RIG, AND SCIENCE: THE MOSSY GROVE
CORE, NW HINDS COUNTY, MISSISSIPPI**

Dr. David Dockery III, RPG

CLEAN BURNING PROPANE

Chris Bowen



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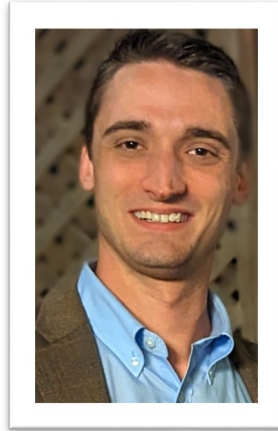
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PRESIDENT'S LETTER



Dear MGS Members,

Punxsutawney Phil may have predicted six more weeks of winter this Groundhog Day, but as of writing this letter, it seems to be warming up already. Mississippi weather may have other plans! We thank Dr. Adam Skarke from Mississippi State University for speaking at our January 8th meeting on “Seafloor Gas Seeps: Discovery, Geologic Investigation, and Energy Resource Implications.” Matt Lee will speak at our February 12th meeting on “Funding Solutions for Plugging and Abandonment of Wells” at the River Hills Club in Jackson. The cost to attend is \$25.00. Check or exact change are appreciated.

Boland Scholarship season is upon us. The Boland Committee plans to contact Universities over the next few days for nominations. Our aim is to present our scholarship awards before our speaker at the April Meeting.

MGS Officers Tim Palmer, Ginger Trochesset, and I will be attending GeoGulf 2025 April 6-8 in Nacogdoches. If any other members plan to attend, let us know so we can rendezvous at the conference.

If you have a topic or are interested in presenting at our meetings, please let me know. We are looking for speakers and subjects for our Fall 2025 schedule.

As always, we extend our heartfelt appreciation for your continued involvement and active participation in the Mississippi Geological Society. The accomplishments of our society serve as a testament to the dedication and expertise of our members!

Best regards,

Jonathan R. Leard, RPG

MDEQ-Office of Geology

Surface Geology Division



2024-2025 MGS MEETING SCHEDULE

When	What/Who	Where
September 11	The Ice Ages in Mississippi - James Starnes	River Hills - 11:30am
October 9	Toddy Guidry - Core Lab	River Hills - 11:30am
November 13	Dwayne Purvis P.E	River Hills - 11:30am
December 12	Christmas Party	JYC - 5:30pm
January 8	Seafloor Gas Seeps Dr. Adam Skarke, Mississippi State University	River Hills - 11:30am
February 12	OneNexus - Matt Lee	River Hills – 11:30am
March 12		River Hills – 11:30am
April 9		River Hills - 11:30am
May	Spring Fling	TBD

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[illegible]



FEBRUARY SPEAKER

Matt Lee



OneNexus

Matt Lee
Lockton Companies
Wednesday, February 12, 2025
River Hills CC, Jackson, MS

Abstract:

Through our innovative life insurance-like product, OneNexus WellSecure™, OneNexus has pioneered a secure, sustainable, and prudent method of pre-funding plugging and abandonment (P&A) expenses.

Our mission at OneNexus is to help prevent the accumulation of new orphaned wells by ensuring that future generations are not left with the financial burden of decommissioning obligations.

Biography:

Matt Lee is a Senior Vice President and dedicated client advocate with over 25 years of experience in the land-based oil and gas sector, specializing in exploration, production, and service contractors. Matt works closely with industry leaders to develop risk management strategies that protect their businesses and drive success. Four years ago, he joined Lockton to help open and grow the Birmingham, Alabama office, bringing his expertise and commitment to delivering exceptional client service.

Matt is a graduate of Mississippi State University's College of Forest Resources and grew up on a cattle farm in West Alabama, where he learned the value of hard work. He has been happily married to his wife, Liz, for 27 years, and together they have raised three adult children. Now embracing the joys of empty-nest life, Matt enjoys spending time outdoors, caring for his farm, and serving his clients.



CURRENT PRICES

Market Watch

Crude Oil Mar 2025

[+ Watchlist](#)

☀ OPEN

Last Updated: Feb 11, 2025 at 9:25 a.m. EST - Delayed quote

\$ **73.44**

▲ 1.12 1.55%

SETTLEMENT PRICE 02/10/2025

\$72.32

< Advanced Charting 1M ▼ \$ % VOL



Natural Gas Mar 2025

[+ Watchlist](#)

☀ OPEN

Last Updated: Feb 11, 2025 at 9:26 a.m. EST - Delayed quote

\$ **3.526**

▲ 0.082 2.38%

SETTLEMENT PRICE 02/10/2025

\$3.444

< Advanced Charting 1M ▼ \$ % VOL





MISSISSIPPI OFFICE OF GEOLOGY

New Publications

The Mississippi Office of Geology is pleased to announce the publication of the following maps for the month of December

[OF-356 Geologic Map of the Bovina Quadrangle Hinds and Warren Counties, Mississippi](#)

[Native Lithic Materials of Mississippi](#)

[OF-349 Geologic Map of the Sharon Southeast Quadrangle Rankin, Madison, and Scott Counties, Mississippi](#)

[OF-348 Geologic Map of the Shoccoe Quadrangle Madison and Rankin Counties, Mississippi](#)

[OF-347 Geologic Map of the Canton Quadrangle Madison County, Mississippi](#)





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MONTHLY POST

Dr. David Dockery III RPG

MDEQ Drilling Crew, Drilling Rig, and Science: The Mossy Grove Core, Northwest Hinds County, Mississippi

David T. Dockery III, RPG

MDEQ Office of Geology's drilling rig and crew have made major contributions to scientific research projects and publications. One example is the Mossy Grove Core Hole through a thick section of Yazoo Clay. Mossy Grove is a property with lakes in northwest Hinds County that was once owned by the famed architect N. W. Overstreet of Jackson, Mississippi, who named it Mossy Grove for its Spanish moss-covered trees. My first wife Mary and I bought the property in 1985, which included Overstreet's fishing lodge built as a weekend get-a-way cabin and a place to bring guests to fish and cookout in his picnic pavilion. It was also a place where, at lake level, there was a thin cover of loess and Forest Hill Formation above a 450-foot-thick layer of Yazoo Clay. At the time, we were working with John Obradovich of the USGS on finding bentonite beds in the Yazoo Clay that could be radiometrically dated from sanidine crystals (from the original volcanic ash that altered to bentonite). The core was drilled from August 19 to September 3, 1991, using MDEQ Office of Geology drilling rig and crew and a 10-foot core barrel. Not only did we find dateable bentonite beds, but the core produced a lot of other scientific research and publications. Rick Fluegeman of Ball State University in Muncie, Indiana, once told me that he supported the research of his students and himself for 20 years from grant funding to study the Mossy Grove Core. Others have published on the core as recently as the 2023 Nature Communications article shown in Figure 1, published some 32 years after the core was drilled (continued). Some people retire after 30 years of service, but our core is still working.

Figure 1

nature communications



Article

<https://doi.org/10.1038/s41467-023-39806-6>

Multi-proxy evidence for sea level fall at the onset of the Eocene-Oligocene transition

Received: 22 December 2021

Accepted: 27 June 2023

Published online: 08 August 2023

Check for updates

Marcelo A. De Lira Mota^{1,2} , Tom Dunkley Jones¹, Nursufiah Sulaiman^{1,3}, Kirsty M. Edgar¹, Tatsuhiko Yamaguchi^{4,5}, Melanie J. Leng^{6,7}, Markus Adloff^{8,9}, Sarah E. Greene¹, Richard Norris¹⁰, Bridget Warren¹, Grace Duffy¹, Jennifer Farrant¹, Masafumi Murayama^{8,11}, Jonathan Hall¹ & James Bendle¹

Results and Discussion

The Mossy Grove Core, Mississippi

Here we present geochemical and micropaleontological records from a ~137 m succession of mid-shelf marine clays, located within the paleo-Mississippi Embayment and recovered within the Mossy Grove Core (MGC)²⁵, drilled near Jackson, Mississippi (Figs. 1–3, Source data). The upper Eocene to lower Oligocene stratigraphy of the US Gulf Coast is split into the Jackson (~ upper Eocene) and Vicksburg (~ lower Oligocene) Groups^{26,27}. The lithology and constituent formations within



MONTHLY POST

Dr. David Dockery III RPG

Figure 2 is the first figure of the publication showing the carbon isotope curve for the core (red curve at left) as compared the composite global curve for that interval (at right).

Figure 2

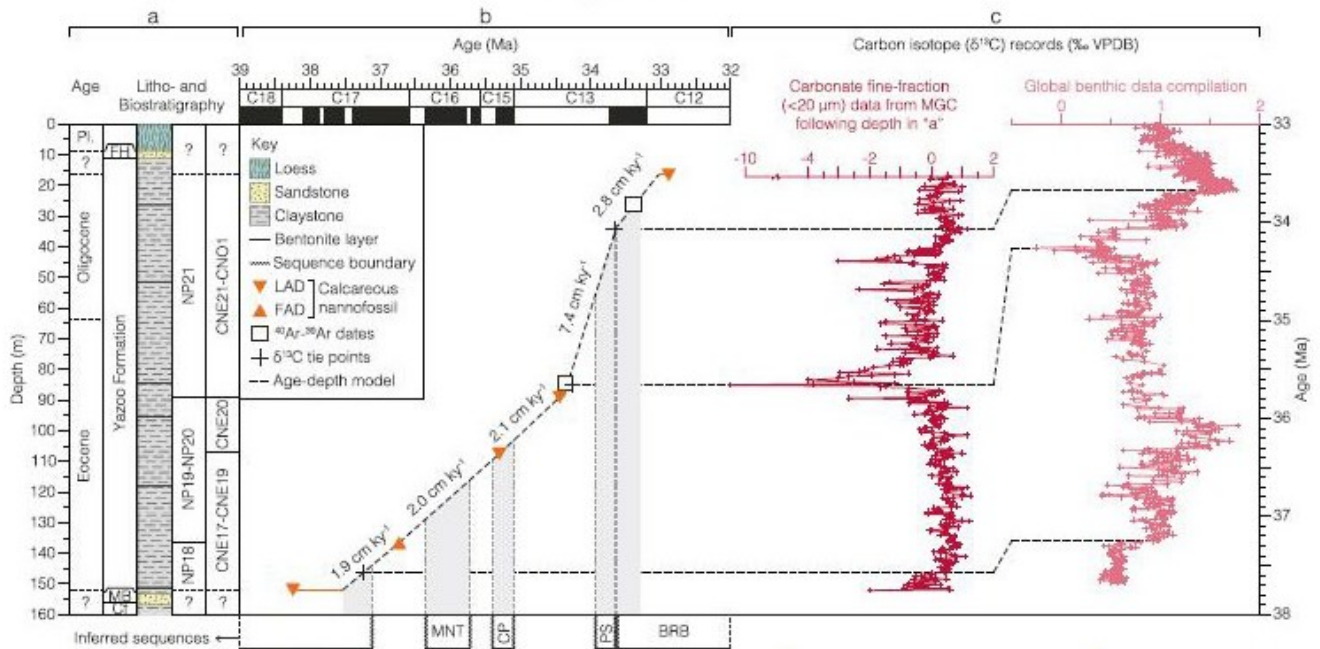


Fig. 1 | Refined age-depth model of the Mossy Grove Core (MGC).

a Lithostratigraphy²⁵ and biostratigraphy²⁸. **b** Geologic timescale³¹, regionally-inferred sequences³³, and sedimentation rates. **c** Correlation of $\delta^{13}\text{C}$ -based tie points, with local carbonate fine-fraction (depth domain) and global benthic foraminiferal (age domain) records. Inferred stratigraphic sequences follow (Miller et al. 2008) for SSQ and are here plotted against MGC age-model for comparison. Key: epoch –

Pleistocene (Pl.); lithostratigraphic units – Forest Hill Formation (FH), Moodys Branch Formation (MB), Cockfield Formation (Cf); biostratigraphic events – first (FAD) and last appearance datum (LAD); study site – Mossy Grove Core (MGC); stratigraphic sequences – Moodys Branch–North Twistwood Creek Clay (MNT), Cocoa Sand–Pachuta Marl (CP), Pachuta Marl–Shubuta Marl (PS), and Bumpnose Formation–Red Bluff (BRB). Source data are provided as a Source Data file.



MONTHLY POST

Dr. David Dockery III RPG

Figure 3 contains selected references to: (1) our original publication on the core in Mississippi Geology (25), (2) a publication by T. Yamaguchi who I helped with a graduate thesis (30), (3) by Obradovich on a radiometric age in the Mississippi Academy of Sciences Journal (32), (4) Rick Fluegeman, who funded his research for 20 years on the core (44), and (5) a Master's Thesis by R. Burgess on the core (61).

Figure 3

25. Dockery III, D. T., Stover, C. W., Weathersby, P., Stover Jr, C. W. & Ingram, S. L. A continuous core through the undifferentiated Yazoo Clay (late Eocene, Jackson Group) of central Mississippi. *Miss. Geol.* **12**, 21-27 (1991).
30. Yamaguchi, T., Norris, R. D. & Dockery, D. T. Shallow-marine ostracode turnover during the Eocene-Oligocene transition in Mississippi, the Gulf Coast Plain, USA. *Mar. Micropaleontol.* **106**, 10-21 (2014).
32. Obradovich, J. D. & Dockery, D. T. III Revisions to the geochronology of the uppermost Yazoo Formation, central Mississippi, and a new estimate for the age of the Eocene. *Oligocene Bound.: J. Miss. Acad. Sci.* **41**, 54 (1996).
44. Fluegeman, R. H. Preliminary paleontological report on the foraminifera of the Mossy Grove core, Hinds County, Mississippi. *Miss. Geol.* **17**, 9-15 (1996).
61. Burgess, R. Analysis of the palynomorph assemblage through the Eocene/Oligocene transition within the Mossy Grove core, Mississippi. *Master Thesis 1*, (University of Birmingham, 2015).



MONTHLY POST

Dr. David Dockery III RPG

It's always nice to do our work in Mississippi and create such an international stir. But that's not all—the core has its own page in a Google AI Overview search (below) with references, image, and such (Figure 4). Below are pictures showing the drilling of the core hole and examination of the core by Curtis Stover (right) and his son Wayne Stover (both were working for MDEQ's Office of Geology at the time).

AI Overview

The Mossy Grove Core is a core sample of marine clay drilled in 1991 from Mossy Grove, Mississippi. The core is located in Hinds County, near Jackson, Mississippi.

What's in the core?

Geochemical and micropaleontological records

The core contains records of carbon and oxygen isotopes, total organic carbon, and microfossils.

Ostracode turnover

Figure 4



Learn more

Mississippi Geology

Jun 7, 1988 — Core hole site at Mossy Grove on north side of lake in SW/4, SE/4, Section 31, T. 7 N., R. 1 W., Hinds Count...

geology

Shallow-marine ostracode turnover during the Eocene

Stratigraphy and age model of the Mossy Grove core. The Mossy Grove core was drilled at Mossy Grove, Hinds County





GEOLOGY POST

ARTICLES, PAPERS or NEWS?

ATTENTION!!!!!! Industry, Professors and Students:

I am looking for more content from the industry and our schools.

Submissions can include anything from professional papers, thesis abstracts, job opportunities to pictures. Anything!!!!

If you have any information or news you would like to share with the Society **PLEASE** email them to the MGS Editor at:

mcaton13@yahoo.com

Thanks & Regards,

Matt Caton
Editor



MONTHLY POST

Chris Bowen

Clean burning propane for a better environment and carbon capture all produced in Hattiesburg



L to R, Chris Bowen, USM Geology alumnus & Director Safety/Environmental Mississippi Tank Company, Hattiesburg, 4th Congressional District Congressman Mike Ezell, & Mississippi Tank CEO Bobby Threatt, MSU Mechanical Engineering alumnus, fronting two 11,000 gallon propane tank trailers produced at the facility. October 2024



MONTHLY POST

Chris Bowen



100,000 gallon CO2 storage tank departing for Texas from Mississippi.

GEO LINK POST

USGS TAPESTRY OF TIME AND TERRAIN <http://tapestry.usgs.gov> The CCGS is donating to all of the 5th and 6th grade schools in the Coastal Bend. Check it out—it is a spectacular map. You might want a framed one for your own office. The one in my office has glass and a metal frame, and it cost \$400 and it does not look as good as the ones we are giving to the schools. Call Owen 510-6224 if you want one for your office for \$150. Duncan, Mike, Chris, Dave, Bob Randy, Seb., Kevin, Ken, Craig, Patrick, Robert.

FREE TEXAS TOPO'S <http://www.tnris.state.tx.us/digital.htm> these are TIFF files from your state government that can be downloaded and printed. You can add them to SMT by converting them first in Globalmapper. Other digital data as well.

FREE NATIONAL TOPO'S [http://store.usgs.gov/b2c_usgs/b2c/start/\(xcm=r3standardpitrex_prd\)/.do](http://store.usgs.gov/b2c_usgs/b2c/start/(xcm=r3standardpitrex_prd)/.do) go to this webpage and look on the extreme right side to the box titled TOPO MAPS DOWNLOAD TOPO MAPS FREE.

<http://www.geographynetwork.com/> Go here and try their top 5 map services. My favorite is 'USGS Elevation Date.' Zoom in on your favorite places and see great shaded relief images. One of my favorites is the Great Sand Dunes National Park in south central Colorado. Nice Dunes.

<http://antwrp.gsfc.nasa.gov/apod/astropix.html> Astronomy picture of the day — awesome. I click this page everyday.

<http://www.spacimaging.com/gallery/ioweek/iow.htm> Amazing satellite images. Check out the gallery.

<http://www.ngdc.noaa.gov/seg/topo/globegal.shtml> More great maps to share with kids and students.

www.geo.org Don't forget we have our own web page.

<http://micro.magneet.fsu.edu/primer/java/scienceoptiscu/owersofl0/>

<http://asterweb.jpl.nasa.gov/galery/default.htm> Great satellite images of volcanoes

<http://terra.nasa.gov/gallery/> More here

www.ermapper.com They have a great free downloadable viewer for TIFF and other graphic files called ER Viewer.

www.drillinginfo.com This is an incredible (subscription) well and completion data service for independents. Can be demo'ed for free.

<http://terraserver.com/> Go here to download free aerial photo images that can be plotted under your digital land and well data. Images down to 1 meter resolution, searchable by Lat Long coordinate. Useful for resolving well location questions.

<http://www.fs.fed.us/gpnmf/volcanocams/msh/> This is a live cam of Mt. St. Helens refreshed every 5 minutes. At the bottom are old videos of past eruptions in this cycle. It is worth a watch especially now.



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(Note: Please contact Steve Walkinshaw at (601) 607-3227 or mail@visionexploration.com for details concerning placing your ad on the MGS web site.)

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