

MISSISSIPPI GEOLOGICAL SOCIETY

*e***BULLETIN**

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TRANSFORMING HOW TO EVALUATE WELLS AND UNLOCK RESERVES
FRANCOIS-XAVIER DUBOST - SLB

USGS GULF COASTAL PLAIN STRATIGRAPHIC RECONCILIATION PROJECT
Dr. David Dockery III, RPG

MONTHLY QUIZ
Steve Walkinshaw



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PRESIDENT'S LETTER

Dear MGS Members,

I hope this email finds you well and ready for the exciting month ahead!

March Meeting Details:

- Our next meeting is scheduled for **Wednesday, March 13, 2024, at 11:30 AM**. We're thrilled to host a distinguished lecturer.
- **Lecture Title:** "Transforming How to Evaluate Wells and Unlock Reserves: Deep Transient Testing"
- **Lecturer:** François-Xavier Dubost

The cost to attend this session is **\$25**. Please bring exact change or a check. Your participation is highly appreciated!

2. **Mississippi Academy of Sciences Recap:** Last month, the **Mississippi Academy of Sciences** was held in Hattiesburg. Our society proudly sponsored the winners of the Geography and Geology Division. Here are the highlights:

- **Co-Chairs of the Geography and Geology Division:**
- Dr. Alyson Brink (University of Southern Mississippi)
- Dr. Claire Babineaux (Mississippi State University)
- **Graduate Oral Presentation Winners:**
- **First Place:** Derek Hoffman (University of Southern Mississippi)
- **Second Place:** Seth Fradella (University of Southern Mississippi)
- **Third Place:** Natalya Usachenko (Mississippi State University)
- **Undergraduate Oral Presentation Winners:**
- **First Place:** Helena Jimenez-Elder (University of Southern Mississippi)
- **Second Place:** Willie Ponthie (Millsaps College)
- **Third Place:** MaKenna Collins (Jackson State University)
- **High School Oral Presentation Winner:**
- Ryan Heydari (Madison Central High School)
- **Poster Recognition:**
- Olivia Pharr (Delta State University)
- MaKenna Collins (Jackson State University)
- Keith Hitzelberger (Mississippi State University)

For abstracts, please visit https://msacad.org/wp-content/uploads/2024/02/Vol-69-No-1_January-JMAS-2-20-2024.pdf



PRESIDENT'S LETTER

3. **AAPG Delegate Update:** Our AAPG delegate and vice president, **Tim Palmer**, will attend the upcoming 'informal meeting' on **Friday, March 15, 2024**, from **7:30 AM to 10:00 AM CST**. The meeting will cover **House Proposed Bylaws Language Changes and a Straw Poll**. Additionally, the **HoD Annual Business Meeting** has been rescheduled for **May 31, 2024**.

4. **Spring Fling Social Event:** Don't forget to mark your calendars for our **Mississippi Geological Society Spring Fling!**

Thank you for being an active part of our society. If you have any questions or suggestions, feel free to reach out.

Wishing you a fantastic March!

Jonathan R. Leard, RPG

MDEQ-Office of Geology

Surface Geology Division

Phone: (601)-961-5352



2023-2024 MGS MEETING SCHEDULE

When	What/Who	Where
September 13	Chad Winter - FC&E Engineering	River Hills - 11:30am
October 11	Tim Palmer	River Hills - 11:30am
November 8	Rawdon Seager	River Hills - 11:30am
December 13	Paul Parrish - MDEQ	River Hills - 11:30am
January	Cancelled	River Hills - 11:30am
February 14	David Snodgrass, MSOGB	River Hills – 11:30am
March 13	François-Xavier Dubost	River Hills – 11:30am
April 10	TBD	River Hills - 11:30am
April 28	Spring Fling	Fertile Ground Beer Co.

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mnbirdwell@comcast.net

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504.756.2000
jmcduff@att.net

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FEBRUARY SPEAKER

François-Xavier Dubost

Society of Petroleum Engineers

Distinguished Lecturer 2023-24 Lecture Season



[Transforming how to evaluate wells and unlock reserves: Deep Transient Testing](#)

Lecturer's Name [François-Xavier Dubost](#)

Lecturer's Employer [SLB](#)

Abstract: Include “What is the one idea you would like the members to take away from this lecture? “

Dynamic data, acquired with wireline formation testing or well testing, are used by operators to address uncertainties associated to reserve estimates and productivity, while rationalizing field development and production costs. However, these two evaluation techniques provide data at different length scales, and with different environmental footprint, cost, and operational constraints.

To help reduce development risks but unlock reserves, a Deep Transient Testing (DTT) technique was developed in response to an industry and customer need in 2015 and has been used since then by many oil companies. The method is a hybrid technique between wireline formation testing and DST. It is based on innovations with higher resolution measurements, pumping of large fluid volumes on wireline at higher rates, extending testing time and circulating the produced fluids out of the well for safety and well control, without the requirement for surface flaring. These features enable dynamic reservoir characterization in thicker formations, higher permeabilities and with much deeper volume of investigation than previously available.

Pressure transient testing and sampling results from DTT technique is now becoming an important component in operating companies' reservoir evaluation programs. The DTT technique is embedded in a digital framework to provide early reservoir fluids models and reservoir insights coupled to geological models, so that well deliverability and prospect commerciality can be assessed. DTT also aligns with global sustainable development goals, by enabling reductions in CO2 emissions by up to 96% percent, and offering high operational efficiency compared with other wireline formation testing systems to significantly reduce energy consumption.

Biography:

Francois-Xavier Dubost focused for 28 years on reservoir performance evaluation and recently joined the SLB HQ team as Reservoir Technical Director. Graduated from Herriot Watt University with an MSc in Reservoir Evaluation and Management, Francois has been looking at all angles of reservoir engineering topics from acquisition to interpretation and incorporation of the measurements into field models. He recently dedicated his interests in the field of Deep Transient Testing, introducing this topic to the industry with the first published papers, presenting it in different expert meetings and lectures, and acting as a leader internationally to develop this new technique. Francois co-authored over 30 publications and filed over 10 patents predominantly on Formation Testing & Sampling



2024 Spring Fling

Hosted by the Mississippi Geological Society

When: Sunday April 28th 2:00-5:00 P.M.

Where: Fertile Ground Beer Co.

800 Manship St Suite 100, Jackson, MS 39202

Price: \$10 Dollar Admission (Students Free)

You are invited to the Mississippi Geological Society Spring Fling. It will be held on Sunday, April 28, 2024 at the Fertile Ground Beer Company in the Belhaven Neighborhood. The Spring Fling will last from 2pm-5pm and will include the full lineup of Fertile Ground brews and heavy hors d'oeuvres. Admission is \$10 and a membership renewal for the membership year beginning on June 1, 2024 and running through May 30, 2025 will be discounted to \$10 if renewed at the Spring Fling. As usual student entry is free. You do not have to be 21 to be in the brewery, but valid id will be required to enjoy a frosty beverage.

Thank you for your continued support of the Mississippi Geological Society.



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MONTHLY POST

Dr. David Dockery III RPG

U.S. Geological Survey Gulf Coastal Plain Stratigraphic Reconciliation Project

David T. Dockery III, RPG

MDEQ Office of Geology is a subcontractor to the Geological Survey of Alabama on two U.S. Geological Survey Gulf Coastal Plain Stratigraphic Reconciliation Projects. The first is the East Gulf Coastal Plain (EGCP) Project, which includes Mississippi, Alabama, and Florida. The second is the West Gulf Coastal Plain (WGCP) Project, which includes Texas, Louisiana, Arkansas, Tennessee, Mississippi, and Alabama. These projects will be the first such undertakings since the American Association of Petroleum Geologists published the *Gulf Coast Region Chart of the COSUNA (Correlation of Stratigraphic Units in North America) Series*, in 1988. The goal is to get seamless geologic correlations for the United States. The second in-person meeting of the EGCP was at the Florida Geological Survey in Tallahassee on February 22-23, 2024.

The Florida Geological Survey includes the Walter Schmidt Museum. In Figure 1, Carolyn Dockery stands beside a replica skeletal mount the terror bird *Titanis walleri*, a species known only from Texas and Florida. Terror birds were once the largest non-reptilian predators in South America. When the Panamanian land bridge formed about 5 million years ago, they crossed into North America as our big cats crossed into South America. Eventually, the big cats won out over the now extinct terror bird





MONTHLY POST

Dr. David Dockery III RPG

Figure 2 is a composite picture of the EGCP meeting room with a screen view of Corey Hensen and James Starnes via Zoom meeting.



Figure 2. Second in-person meeting of the WGCP at the Florida Geological Survey. On the screen (via Zoom) are Corey Hensen and James Starnes.



MONTHLY POST

Dr. David Dockery III RPG

The second in-person meeting of the WGCP was hosted by the Arkansas Geological Survey at El Dorado, Arkansas, on March 6-7, 2024. The first day's meeting was around a conference table and by Zoom. The second day was a fieldtrip with stops to see outcrops of the Cockfield Formation, Sparta Formation, Cane River Formation, and basal Wilcox Group. In Figure 3, Doug Hanson of the Arkansas Geological Survey explains a field trip stop using geologic maps attached to the Survey van by magnets.



Figure 3. Doug Hanson of the Arkansas Geological Survey showing the geology of a fieldtrip stop with magnets holding geologic maps on the van doors.



MONTHLY POST

Dr. David Dockery III RPG

Figure 4 is a group picture at the last field trip stop in the graveliferous basal sands of the Wilcox Group. Mississippi is taking the lead in creating regional correlation charts for both groups with feedback from participating states. Corey Hensen, a Ph.D. student from Cornell University, is helping Mississippi by putting the charts in Illustrator format.



Figure 4, left to right, Peng Li (Arkansas), Ben Byerly (Alabama), Bobola Akinbomide (Louisiana), Scott Ausbrooks (Arkansas), Greg Guthrie (Alabama), Valerie Harrison (Tennessee), Kelly Hattori (Texas), Nikhil Sharma (Texas), Doug Hanson (Arkansas), Peter Flaig (Texas), and Carolyn Dockery (Mississippi).



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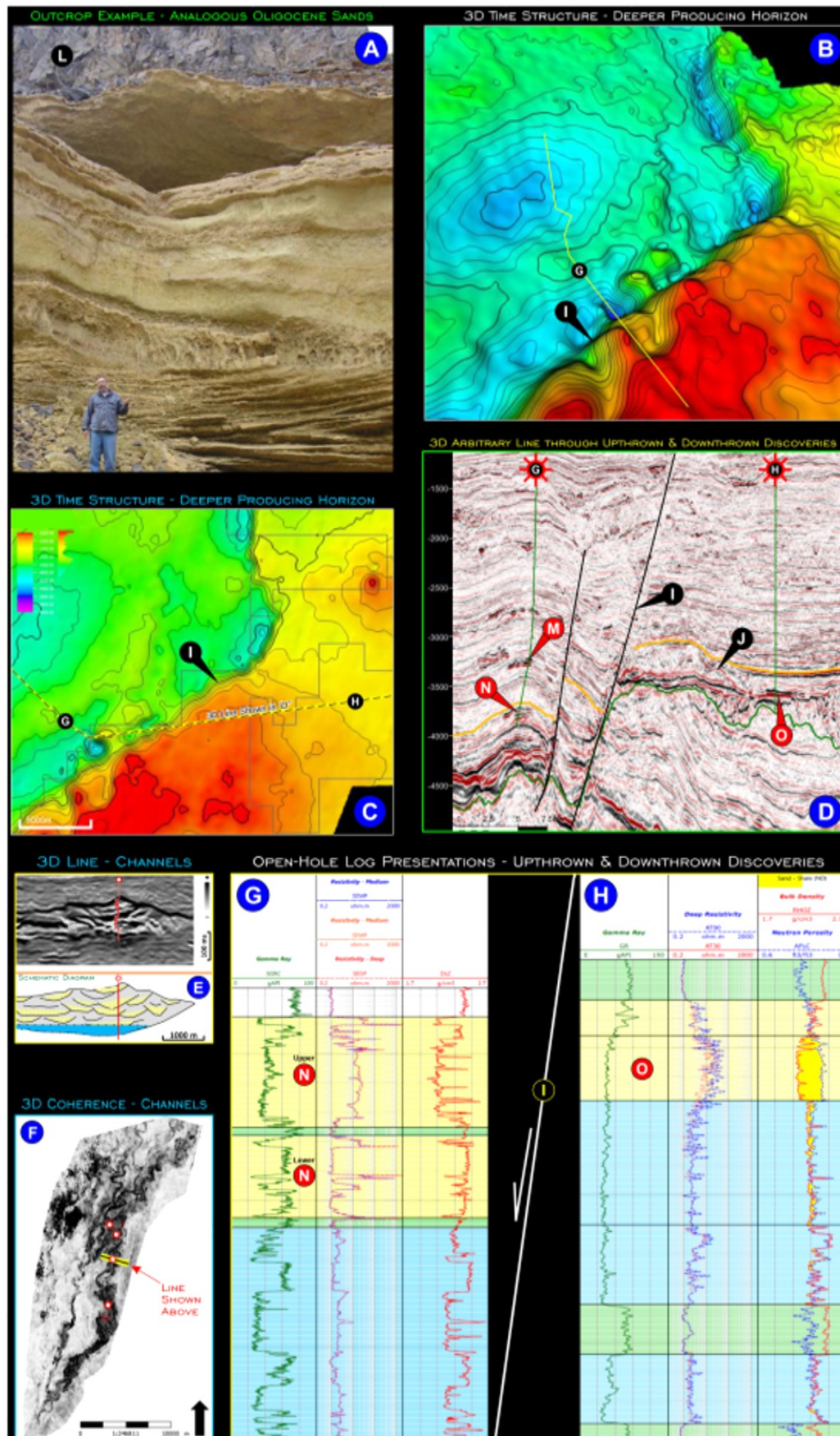
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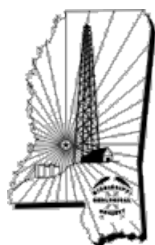




MONTHLY POST

Steve Walkinshaw





MONTHLY POST

Steve Walkinshaw

Oil patch quiz time. Since the Oligocene, large volumes of sediments have been contributed to this basin by several fluvial systems, including a large river. Its sediment contribution was accentuated by a significant drop in sea level that occurred about 6 Ma. This basin is bounded on its east side by a major fault.

Most reservoirs discovered to date contain gas and condensate. Images "B", "C" and "D" illustrate two gas discoveries drilled as extensions to a known linear trend.

One discovery, drilled ~15 years ago, is upthrown to the major fault ("I"); the other more recent (2018) discovery is downthrown.

Questions...

Part 1: (a) What basin am I referring to? (b) What river?

Part 2: What's the name of the large fault labeled "I"?

Part 3: What's the name of the linear trend extended by these discoveries?

Part 4: What's the name and age of the deeper reservoir ("N")?

Part 5: What is the age of the younger reservoir "M"?

Part 6: What is "J" pointing to?

Part 7: What is the age of the principal source rocks in this basin?

Part 8: What's the name of the recent (2018) discovery well?

Part 9: What does reservoir "O" exhibit in "H"?

Bonus:

Part 10: What field does the 3D line in "E" cross?

Part 11: What is the lithology of the rocks labeled "L"?

Part 12: What happened here ~6 Ma?



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

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.

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<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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MONTHLY POST

Steve Walkinshaw

Answers:

Part 1: (a) What basin am I referring to? (b) What river? (a) the Herodotus Basin (b) the Nile River

Part 2: What's the name of the large fault labeled "I"? the Rosetta Fault

Part 3: What's the name of the linear trend extended by these discoveries? the Baltim (Canyon) Trend

Part 4: What's the name and age of the deeper reservoir ("N")? Abu-Mahdi, Messinian (Late Miocene)

Part 5: What is the age of the younger reservoir "M"? Pliocene

Part 6: What is "J" pointing to? the local equivalent of the Baltim Canyon

Part 7: What is the age of the principal source rocks in this basin? Oligocene

Part 8: What's the name of the recent (2018) discovery well? Swan-East-1

Part 9: What does reservoir "O" exhibit in "H"? gas effect, primarily impacting the neutron log

Part 10: What field does the 3D line in "E" cross? Simian Field

Part 11: What is the lithology of the rocks labeled "L"? basalt

Part 12: What happened here ~6 Ma? the onset of the Messinian Salinity Crisis (the physical separation of the Mediterranean from the Atlantic during the Late Miocene)