

MISSISSIPPI GEOLOGICAL SOCIETY
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March 2020



REUSING ABANDONED NATURAL GAS STORAGE SITES FOR COMPRESSED AIR ENERGY STORAGE

Dr. Amin Amirlatifi - Mississippi State University

THE 2020 FOSSIL ROAD SHOW

Dr. David T. Dockery, RPG, Office of Geology



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PRESIDENT'S LETTER

James O. Sparks, RPG



Hello to all. The speaker for our March 11th meeting is Dr. Amin Amirlatifi. He will give a presentation on "Reusing Abandoned Natural Gas Storage Sites for Compressed Air Energy Storage".

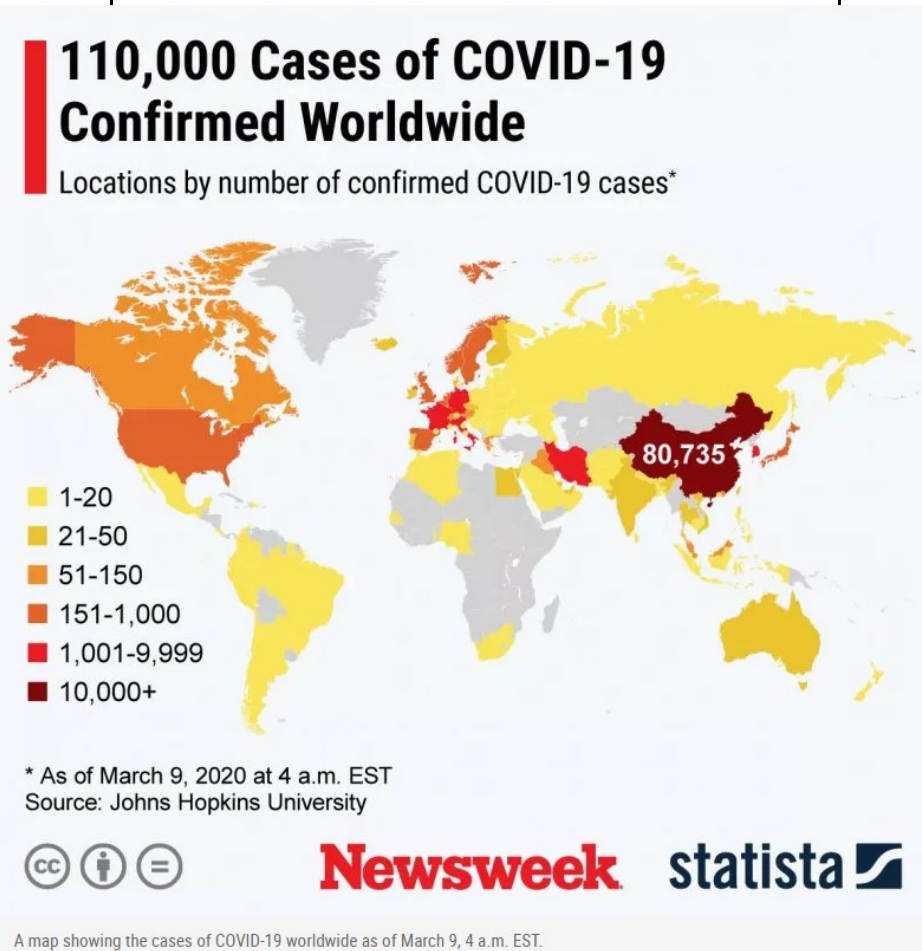
As you are well aware, the stock market and oil futures market are tanking. Early Monday, the oil futures were at \$33.58 and falling due to Russia and Saudi Arabia refusing to cut production in a time of lower demand.

As stated in the in the February letter, in January I received an email from Tom Bardol (AAPG House of Delegates Member) informing MGS that we have not had a representative at the AAPG annual meeting for the last two meetings. The AAPG Annual Convention will be in Houston June 7-10. If anyone is planning on attending and would like to represent MGS, please let me know.

Hope to see everyone at the March meeting on Wednesday, March 11th.

2019-2020 MGS MEETING SCHEDULE

When	What/Who	Where
September 12, 2019	Fall BBQ	Jackson Yacht Club-5:30pm
October 10, 2019	Jess New—MSOGB	River Hills – 11:30am
November 14, 2019	Stephen Champlin, RPG MDEQ	River Hills – 11:30am
	Merry Christmas	
January 8, 2020	Steve Walkinshaw—Jackson Gas Rock	River Hills – 11:30am
February 12, 2020	Alex Owen—Smackover Exploration	River Hills – 11:30am
March 11, 2020	Reusing Abandoned Natural Gas Storage Sites Dr. Amin Amirlatifi	River Hills – 11:30am
April 8, 2020	Boland Scholarship Awards	River Hills – 11:30am
May 13, 2020		Jackson Yacht Club– 5:30pm



ICERS MEETINGS

September 10, 2019
October 8, 2019
November 12, 2019
January 7, 2020
February 11, 2020
March 10, 2020
April 7, 2020
May 12, 2020

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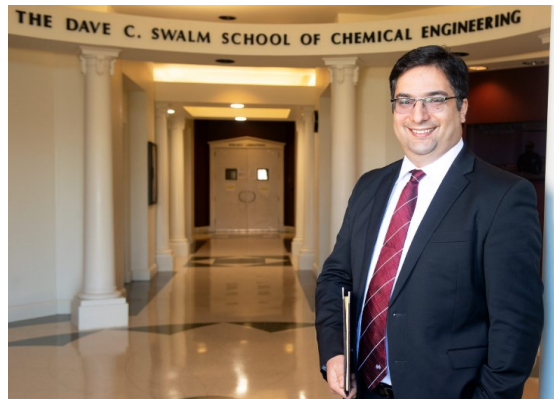
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FEBRUARY SPEAKER

Dr. Amin Amirlatifi



"Reusing Abandoned Natural Gas Storage Sites for Compressed Air Energy Storage"

-
Dr. Amin Amirlatifi

Mississippi State University

Abstract:

The rather unexpected additional supply of oil and gas from unconventional resources, along with some geopolitical factors, has resulted in drastic price reductions and a downturn in the oil and gas industry. Before the most recent downturn in the oil and gas industry, natural gas was traded as a high-value commodity with prices as high as \$30.03/MWh, but its price has dropped significantly to \$6.24/MWh, an all-time low in the past three decades. Such low prices can render Natural Gas Storage (NGS) sites unprofitable and operators are left with no choice but to abandon the site.

He aims to investigate the feasibility of reusing uneconomical or abandoned NGS sites for compressed air energy storage (CAES) purposes. CAES is recognized as a viable means of high-capacity short- to mid-term energy storage. This talk compares the net stacked benefit of converting NGS sites into CAES against that of conventional energy storage and development of CAES from the ground up.

We will also have a look at some of the ongoing Machine Learning and Data Analytics projects that are being conducted in his research team at Mississippi State University.



BOLAND SCHOLARSHIP WATCH

Faculty & Students,

This is a new year and the Mississippi Geological Society along with the Boland Scholarship Fund would like to remind you that we want to honor the most outstanding overall students for the 2019-2020 year.

Each year, the Boland Scholarship awards 1 student from each institution a check that rewards students for their hard work and dedication to the Geosciences and their community.

We look forward to a great year and hope to see you at our monthly meetings.

Best Regards,

Matt Caton
Editor



THE UNIVERSITY OF
SOUTHERN
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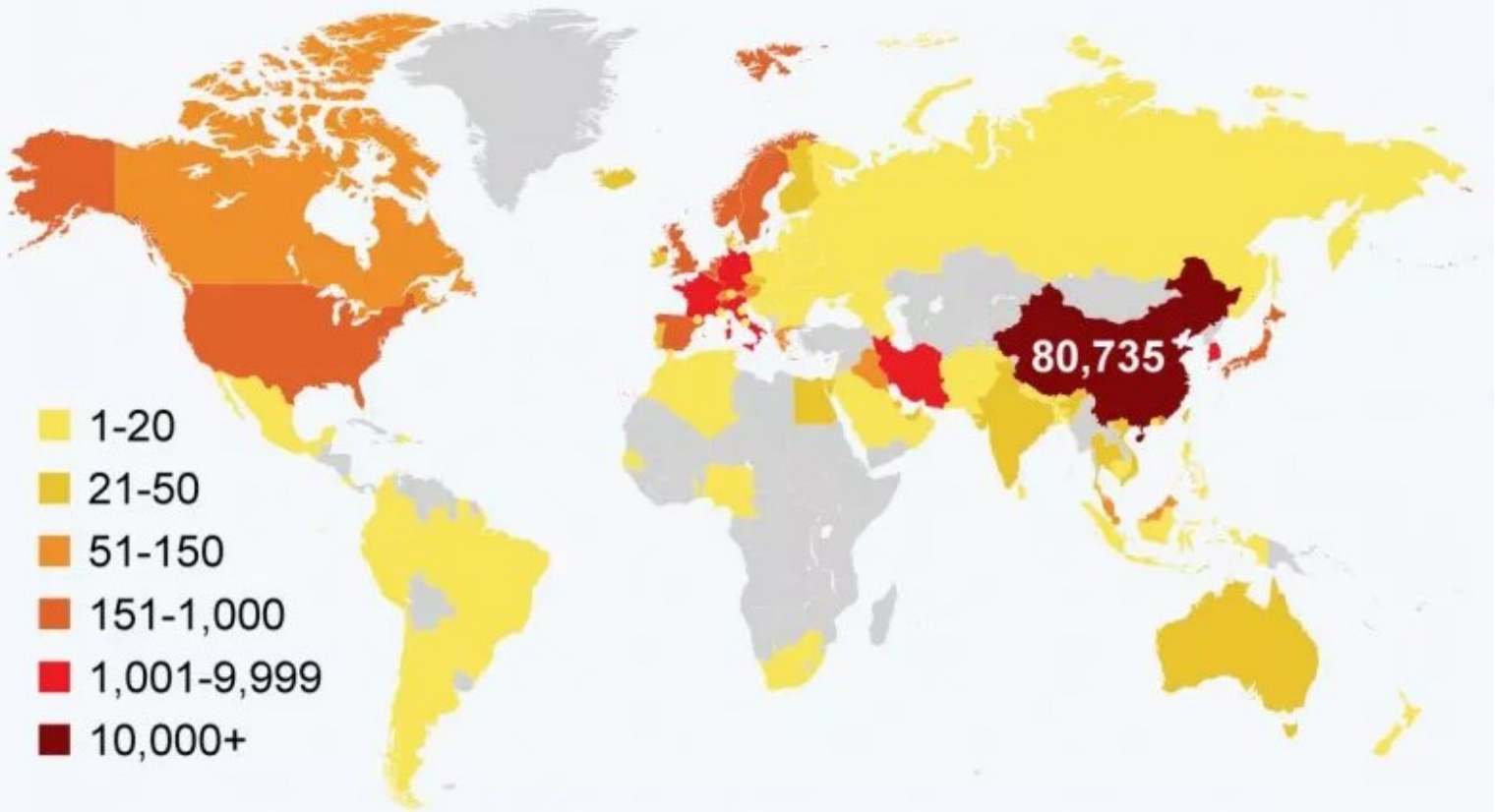
MILLSAPS
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CORONAVIRUS UPDATE

110,000 Cases of COVID-19 Confirmed Worldwide

Locations by number of confirmed COVID-19 cases*



* As of March 9, 2020 at 4 a.m. EST
Source: Johns Hopkins University



Newsweek

statista

A map showing the cases of COVID-19 worldwide as of March 9, 4 a.m. EST.



CURRENT PRICES



Marketwatch





MONTHLY POST

Dr. David T. Dockery III RPG

THE 2020 FOSSIL ROAD SHOW AT THE MISSISSIPPI MUSEUM OF NATURAL SCIENCE

David T. Dockery III, RPG

The 17th Annual Fossil Road Show drew a large crowd bringing items to be identified, a team of experts from around the state, and exhibitors with interesting finds. MDEQ Office of Geology has assisted with this event since its inception. The following is a visual tour of some things we saw. Figure 1 is Woody Pettis' exhibit of fossils he found in Yazoo County. At left in the picture are fossil mastodon teeth and tusk fragment. At middle are fossil *Basilosaurus* vertebrae, and at right is a large Keokuk geode in two pieces. After finding the large geode in creek gravel, Woody went back looking for the missing piece and found it! The geode was ice rafted from bedrock in Keokuk, Iowa.



Figure 1. Fossils from Yazoo County.



MONTHLY POST

Dr. David T. Dockery III RPG

Figure 2 has museum paleontologist George Phillips (middle) with collectors exhibiting mastodon teeth, atlas vertebra, and a complete and partial tusk from Mississippi.



Figure 2. Fossil mastodon remains.



MONTHLY POST

Dr. David T. Dockery III RPG

Gravel fossils of interest include the spirillum of a large spirifer brachiopod shown in Figure 3 as set on other spirillum images on Plate 9 of *Rocks and Fossils Found in Mississippi's Gravel Deposits*.



Figure 3. Fossil spirillum of a large spirifer brachiopod.



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Dr. David T. Dockery III RPG

Another gravel fossil shown in Figure 4 is the surface fragment of the colonial coral *Lithostrotionella*.



Figure 4. Fragment of the colonial coral *Lithostrotionella*.



MONTHLY POST

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While not a vertebrate paleontologist, I could identify the ground sloth femur held by the young lady in figure 5 with the mounted femur visible in the background.



Figure 5. Ground sloth femur.



MONTHLY POST

Dr. David T. Dockery III RPG

James Starnes was the lecturer for this year's Fossil Road Show and discussed Mississippi's bedrock sources for Native American artifacts (and did a great job of it). In Figure 6, artifact and bedrock examples are arranged on the table before James and shown on the screen behind him. The resident museum artist for the Fossil Road Show is Sam Beibers.



Figure 6. James Starnes speaking on Mississippi lithic sources for stone artifacts.



MONTHLY POST

Dr. David T. Dockery III RPG

In Figure 7 Sam adds pastel colors to a *Basilosaurus* vertebra to make it look way better than the specimen he is illustrating.



Figure 7. Sam Beibers painting of a *Basilosaurus* vertebra.



GEOLOGY POST

ARTICLES, PAPERS or NEWS?

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

I am adding a dedicated section that includes 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:

mcaton@tellusoperating.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.

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/owersof10/>

<http://asterweb.jpl.nasa.gov/gallery/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/gpnl/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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2019-2020

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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.)

Total Remitted \$ _____

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