# TARY 2017

Volume 57, Number 11



MAY 8 - NOGS LUNCHEON Presentation: On the Influence of Post-LGM Ice Shelf Loss and Grounding Zone Sedimentation on West Antarctic Ice Sheet Stability Guest Speaker: Austin McGlannan Louisiana State University • Baton Rouge, Louisiana

## **SCIENCE FAIR WINNERS HONORED AT NOGS APRIL LUNCHEON**



1st Place Winner, Blythe Broussard

Two of the winners from the Region IX Science and Engineering Fair: Senior Division were honored at the April NOGS luncheon. 1st Place Winner Blythe Broussard and 3rd Place winner **Ashley Seiser** brought their winning posters to the meeting and answered questions from NOGS members afterwards. Broussard won for her work evaluating the impact of motor oil pollution on grass shrimp while Seiser was recognized for her use of Google Earth to track the progress of coastal restoration projects in Louisiana. Both are students at John Curtis Christian High School in River Ridge and were mentored by NOGS honorary life member Cathy Boucvalt.



3rd Place Winner, Ashley Seiser



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Interested in contributing to the NOGS LOG? Please submit items by the 1st Friday of the month to nogseditor@gmail.com. Advertising requests should contact the NOGS office at info@nogs.org.

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## on the cover

## Cover Photo by Bob Wick, Bureau of Land Management

## Carrizo Plain National Monument — California

This month's cover photo comes from the Carrizo Plain National Monument in Southern California. Bounded by the Tremblor and Caliente Ranges, the 250,000-acre plain is well known for its archeological geological sites as well as its prevalence of interesting flora and fauna. Wallace Creek remains one of the most well-known features of the plain thanks to the influence of the San Andreas fault zone. The active tectonics in the region are observable in expressions like the ravines pictured on the cover, but Wallace Creek in particular is often cited as a textbook examples of surface fault expression with the readily apparent right-lateral offset of the steam channel as it crosses the fault. With low rates of erosion due to the Carrizo Plain's location in the rain shadow of the Coastal and Western Transverse Ranges, these relatively young tectonic features tend to be wellpreserved. The Carrizo Plain is also famous for the annual wildflower blooms that dominate the valley floor and the face of the Tremblor Range. The so-called "Super Bloom" in April 2017 has been widely described as one of the most vibrant wildflower displays in recent memory.

## From the Editor

Oftentimes when I reply "geologist" to people's inquiry as to my career, the frequent response of, "Oh wow! Really?" carries a surprised tone. Most of the time they pleasantly share with me how their uncle was a geologist or how they think volcanos are "neat". But sometimes, relative strangers feel comfortable bringing their personal take on gender roles into our chit-chat. This varies from unsolicited advice on how to succeed in a historically male-dominated field, the occasional assumption that I must teach grade school, or even a well-intentioned but tactless congrats on "getting into" the sciences. The conversation about gender in science is a complex one worthy of discussion but perhaps not well suited for an editorial note. However, these encounters remind us that diversity in the geosciences can't be taken for granted. Robbie Rice Gries delves into the matter at length in her excellent book featured in this month's Bookshelf on page 22. But as for NOGS, by supporting educational endeavors like Super Science Saturday, science fairs, scholarships, and the local children's museums, we assume an important role in strengthening the future of geology by encouraging future scientists regardless of gender or background. Thanks to everyone who helps us work towards this goal, now and in the future.

\_aura Laura Sorey, Editor



2015 Rates

2017 Advertising rates

The New Orleans Geological Society was formed in 1941, with an initial membership of only 55. It has always been an active professional society and presently has a membership of 500.

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NOGS now has a Facebook page thanks to Laura Sorey, Tom Klekamp, and Alex Janevski. Tom had set up a NOGS Facebook group where he communicated with 90, or so, friends about topics of general geologic interest. Alex suggested we expand this into something that would allow NOGS to reach a broader audience and use the Facebook features that millions of users love. The most difficult iob fell to Laura Sorey. She was tasked with learning the subtle nuances that are built into the algorithms used by Facebook to determine to whom, how often, and by what means updates are sent. This was no small task and will be an ongoing aspect of the page as we (I really mean Laura) learn more about navigating in this medium. We (now I mean me too) welcome your feedback and suggestions for improvement. For now, Tom, Laura, and Liz McDade will be the administrators for the page and will control content. Protocols will be set up and communicated to all NOGS members so that we maintain the page in accordance with the terms of the Memorial Foundation's 501(c)3 tax status which does not allow political advocacy of any kind, as well as with Facebook guidelines. This will make the NOGS Facebook page a place where you can go to learn about new and exciting things in the earth and environmental sciences and leave behind all the political garbage that seems to be never-ending. However, let me first say this about President Trump – just kidding! What I would like to say is a big thanks to Laura, Tom, and Alex for their willingness to take on this job and create what I believe will become a valuable resource for all NOGS members.

One of the items Tom had previously posted in the NOGS group dealt with a study by NOAA which showed that methane emissions from the United States did not grow significantly from 2000 to 2013 despite increased domestic production of oil and gas. This is significant because a global increase in atmospheric methane levels has been observed starting in 2007 and other groups had attributed the increase to the surge of activity in the US oil industry spurred on by the wider use of fracking. Although this report did not make the front pages of any news service I am aware of, at least the atmospheric science community is aware of the positive impact of steps taken by our industry to operate in an environmentally responsible manner. Hats off to the scientists at NOAA who let observations dictate their findings, as it should be in all science.

President

**From th**e

Jim Zotkiewicz has announced the candidates for the 2017-2018 Board of Directors. Incoming President Kathy Haggar will welcome the following officers: President-Elect - Alex Janevski; Vice-President – Chris McLindon; Secretary – Grant Black; Treasurer – Margaret McKinney; Editor – Laura Sorey; Director - David Reiter; and AAPG Delegates – Alex Janevski and Liz McDade. This is an excellent slate of candidates, and I am confident they will serve NOGS well.

Summer is approaching quickly, and NOGSsponsored activities take a break except for monthly luncheons and the NOGS Geoscience Seminar at the Deepwater Technical Symposium. The Geoscience Seminar will be held either right before or right after the DWTS (August 21-23) and will feature John Dribus of Schlumberger who always gives fascinating talks. If you are finalizing your summer vacation plans you might want to keep these dates open.

## Al Melillo



H

## **NOGS Office**

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Phone: 504-561-8980 • Email: info@nogs.org • Website: www.nogs.org The office is located at 810 Union Street, Suite 300, New Orleans, LA 70112. Correspondence and all luncheon reservations should be sent to the above address.



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## May 8 • NOGS Luncheon

Holiday Inn Downtown Superdome \$3.00 validated parking in hotel garage

Presentation:

On the Influence of Post-LGM Ice Shelf Loss and Grounding Zone Sedimentation on West Antarctic Ice Sheet Stability

Guest Speaker:

## Austin McGlannan

Louisiana State University • Baton Rouge, Louisiana See pages 8 and 9 for Abstract and Biography

HOLIDAY INN DOWNTOWN SUPERDOME

Check with concierge or front desk for location. Lunch served at 11:30 am

## **ADMISSION:**

With reservation	\$30.00
Without reservation	\$35.00
Student Member with reservations	<b>FREE</b>

## May 1

NOGS Annual Golf Tournament Money Hill Golf Course • Abita Springs, Louisiana For more information: annette@nogs.org or 504-561-8980

## July 13-15

Petroleum History Institute Symposium Marathon Center for the Performing Arts • Finlay Ohio For more information: http://petroleumhistory.org/

## June 5

NOGS Luncheon Holiday Inn Downtown Superdome • New Orleans, Louisiana For more info: annette@nogs.org or 504-561-8980

## August 16-17

NAPE Summer George R. Brown Convention Center • Houston, Texas http://napeexpo.com/shows/about-the-show/houston

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## May 8 NOGS Luncheon Presentation

 $\cancel{3} \cancel{3} \cancel{3} \cancel{3}$  at the Holiday Inn Superdome  $\cancel{3} \cancel{3} \cancel{3} \cancel{3}$ 

## On the Influence of Post-LGM Ice Shelf Loss and Grounding Zone Sedimentation on West Antarctic Ice Sheet Stability

## Presented by Austin McGlannan Louisiana State University • Baton Rouge, Louisiana

## ABSTRACT

The Whales Deep Basin in eastern Ross Sea was occupied by the paleo-Bindschadler Ice Stream during the Last Glacial Maximum (LGM). Multibeam swath bathymetry from the basin shows that megascale glacial lineations (MSGLs) extend to the continental shelf break. In a landward direction, these lineations are buried by a backstepping and overlapping stack of progressively younger grounding zone wedges (GZWs). These constraints require that the West Antarctic Ice Sheet (WAIS) grounded at least seven times within 60 km of the shelf edge. The stratal relationships in the Whales Deep Basin do not however uniquely reveal the magnitudes of grounding line and calving front retreat and re-advance between the successive groundings. Here we investigated this issue by analyzing sediment facies and diatom assemblages from a new regional transect of cores from the basin. The core data show that a small ice shelf formed as the grounding line backstepped over the outer continental

shelf. The ice shelf broke up during the fourth grounding but the grounding line remained on the outer continental shelf for three additional groundings. Accelerated ice stream flow increased sediment flux to the grounding line and thinned the WAIS at the grounding line. Following the seventh grounding, thinning contributed to an abrupt 200 km retreat of the grounding line to the middle continental shelf. The long-distance retreat slowed only as the grounding line approached the northern side of Roosevelt Island. A large ice shelf reformed over the middle continental shelf during the rapid grounding line retreat. The facies relationships on the middle continental shelf indicate that the calving front then shifted abruptly to its modern position. The groundtruth of the seafloor geomorphology presented here is important because it is a necessary framework for constraining retreat chronology for a central part of the WAIS that was not influenced by East Antarctic Ice Sheet overflow.



## BIOGRAPHY

**Austin McGlannan** graduated from Purdue University in May, 2014 with a Bachelors of Science in Geology & Geophysics. While at Purdue he helped site locations to host Earthscope's Transportable Array of broadband seismic stations throughout Indiana and Parts of Kentucky. This summer field internship initiated his undergraduate research project under the guidance of Dr. Hersh Gilbert investigating the crustal structure and tectonic evolution of the North American Midcontinent. This research has recently been published in Earth and Planetary Science Letters. Currently, Austin is concluding his Masters degree at Louisiana State University under the Guidance of Dr. Philip Bart. Austin's masters research investigates the retreat of the West Antarctic Ice Sheet in eastern Ross Sea, Antarctica through the lens of sedimentological and geomorphological observations. This research has been submitted to Marine Geology for publication. While growing up in Miami, Fl. Austin sailed Optimist Digheys, Laser Radials, and 420s competitively. To this day he enjoys sight fishing around the Ten Thousand Islands of southwest Florida and hiking throughout the Big Cypress National Preserve. Drawing on his experience from the swamps of southwest Florida, Austin enjoys kayaking Louisiana's lakes and bayous.



THE MAY LUNCHEON RESERVATION DEADLINE IS MAY 5. CONTACT THE NOGS OFFICE

## "And Looking Ahead . . . "

The next luncheon will be held on June 5th. Our guest speaker will be announced later this month. Contact the NOGS office at 504-561-8980 or use the PayPal link at www.nogs.org to make your reservation.





## CALENDAR OF EVENTS: MAY - AUGUST 2017

If you know of upcoming seminars or academic events that may be of interest to our members, please email the event details to Laura Sorey at nogseditor@gmail.com to be included in the monthly calendar.

2017	EVENT	LOCATION	CONTACT / INFO
1 May	NOGS Annual Golf Tournament	Money Hill Golf Course Abita Springs, LA	annette@nogs.org or 504-561-8980 See announcement on page 2
8 May	NOGS Luncheon Speaker: Austin McGlannan "On the Influence of Post-LGM Ice Shelf Loss and Grounding Zone Sedimentation on West Antarctic Ice Sheet Stability" Louisiana State University • Baton Rouge, Louisiana	Holiday Inn Superdome	annette@nogs.org or 504-561-8980
14 May	Mother's Day		
29 May	Memorial Day		
5 Jun	NOGS Luncheon Speaker: TBA	Holiday Inn Superdome	annette@nogs.org or 504-561-8980
10 Jul	NOGS Luncheon Speaker: TBA	Holiday Inn Superdome	annette@nogs.org or 504-561-8980
4 Jul	Independence Day		
13-15 Jul	Petroleum History Institute Symposium	Finlay, Ohio	http://lpetroleumhistory.org/
22 Jul	End of first period of discounted registration for 2017 Deepwater Technical Symposium	New Orleans Marriott Convention Center	http://www.deepwaternola.org/ registration/
16-17 Aug	NAPE Summer	Houston, Texas	http://napeexpo.com/shows/about- the-show/houston

## **2017 ASBOG Exam Information & Deadlines**

The Louisiana Board of Professional Geoscientists will proctor the ASBOG Fundamentals of Geology and Practice of Geology exams on October 6, 2017.

LBPOG must receive your application (including transcript and references) for GIT certificate or PG license for approval by the Board prior to their meeting on June 13.



The LBOPG Proctoring/Verification Application and Fee must be received by LBOPG by July 21 in order to sit for the October 6 exam.

<u>Note</u>: You must have a pending application for a GIT certificate or PG license and relevant fees submitted prior to submitting the application for proctoring.

See www.lbopg.org for more info.

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## New Orleans Geological Auxiliary News

"The objective of the Auxiliary is to promote fellowship among the wives of the members of the New Orleans Geological Society and to render assistance to NOGS upon request."

Lots of fun was had by all at the annual Spring Soiree hosted by Trez and Jim Zotkiewicz in their lovely Metairie home. There was a nice turnout including NOGS board members and their spouses. The rain stopped in time for the party but left a chilly evening too cool to enjoy Trez and Jim's beautiful yard. Following visiting over glasses of wine, a fabulous dinner catered by Toulouse was enjoyed while seated at flower-laden tables. All was planned and executed by the committee, composed of Trez, Jean Jones, Retta Stephens and our president, Trudy Corona. It was grand!

Next up for the Auxiliary is our Installation Luncheon set for May 12 at Café Adelaide, downtown in the beautiful Lowe's Hotel with treasured valet parking! A delicious menu has been planned by chairmen Susie Baker and Mary Ellis Hasseltine: spinach salad, choice of their famous shrimp and grits or baked chicken breast, and finishing with Adelaide's award-winning white chocolate biscuit pudding! Are you hungry yet? Plus 25-cent martinis! Don't miss out on this one! At the May event, new officers will be installed. We are pleased to announce the following ladies have accepted an office:

President – Margie Conatser Vice President – Camille Yeldell Secretary – Trez Zotkiewicz Treasurer – Judy Lemarie Member-at-large – Trudy Corona Directors Genny Melillo and Linda Peirce (2016-18), Penny Bryant and Retta Stephens (2017-19).

Events for the fall and next year will be discussed and selected at the end of May by this new board. Everyone's ideas are welcome. Also, we are always seeking new members to join this group of great women. If your husband is a current member of NOGS, you are eligible for membership in NOGA. And we'd love to have you! Please use the application below and mail your dues to Judy Lemarie now!

Happy summer! Alma Dunlap, NOGA Director

New Orleans Geological Auxiliary Membership Application			
Name	Spouse's Name		
Address	Home Phone		
City, State, Zip	Cell Phone		
Spouse's Company	Email		
Dues: \$25 payable to New Orleans Geological Auxiliary Please mail to Judy Lemarié, Treasurer, #2 Yosemite Dr., New Orleans, LA 70131			



## **NOGS Fault Atlas Project**

For the NOGS luncheon meeting on April 10, Dr. Nancye Dawers of Tulane University presented part of her ongoing research on faulting in south Louisiana. In addition to relating to the larger discussion on driving mechanisms of coastal subsidence, Dr. Dawers talk also pertains to the NOGS proposal and work towards creating a Regional Fault Atlas that could be used to inform future subsidence predicative models and strategies for coastal subtainability.

Visit http://nogs.org/links/ and select "NOGS: Faulting and Subsidence in Coastal Louisiana" to learn more about this important geological initiative.



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## **NOGS 75th Anniversary**

In honor of the 75th anniversary of the New Orleans Geological Society, we are releasing a series of office and personal mementos commemorating NOGS's seventy-five years of dedicated service to geology, professional development, and science education in New Orleans. If you're interested in purchasing any of these commemorative pieces, please contact Annette Hudson at info@nogs.com or 504-561-8980 for order details and exact pricing.



**6" Round Slate\*** (pictured with optional stand)

\$25.00 with order of 50 or more

**\$35.00** with order of less than 50

## **Optional Acrylic Stand** (not pictured)





## "Family Fun Eat & Run"

5K and 1/2 Mile Run/Walk Sunday, April 9, 2017 + City Park, New Orleans, La



The PIPE Family Fun Eat & Run was held on April 9 at City Park. Benefitting the Louisiana Children's Museum, Bayou Country Children's Museum, and Children's Museum of St. Tammany, the run was well attended by NOGS members, families, members of the community, and running enthusiasts.

## **BENEFITING THREE AREA CHILDREN'S MUSEUMS**







PHOTOS BY ARTHUR CHRISTENSEN

## South Louisiana and Offshore Gulf of Mexico Exploration and Production Activities

LAFAYETTE DISTRICT, ONSHORE AREA By Kevin J. Trosclair

The Baker-Hughes United States rig count for the week of March 31 was 802 rigs, up 48 rigs from the prior month. Rig activity in the U.S. continues to climb from a low of 404 rigs in May 2016. The Louisiana rig count (not including the OCS) averaged 36 rigs for the month of March. This is a slight increase from 34 rigs the prior month.

North Louisiana Rigs:	30
South Louisiana Rigs:	6
Land	4
Inland Waters	2

## NEW LOCATIONS

In Plaquemines Parish, **Cox Bay Field (A)**, Forza Operating, LLC has drilled the #1 SL 1794 (SN 250087) in Sec.17, 18S-16E. The well was drilled to a depth of 11,316 feet and casing was run to total depth and the rig was released. The location is less than one mile north of production in Cox Bay.

In Terrebone Parish, **Oyster Bayou Field (B)**, Castex Energy, Inc. permitted the #l SL 21614; 8200 RA SUA (SN 250090) to a proposed total depth of 14,578 feet (12,750' TVD), located 13,354 feet from the surface location, in Four Leauge Bay, 20S-13E. The location offsets old gas production and there is no current production in the field.

In Iberville Parish, **Laurel Ridge Field (C)**, Ponderosa Oil & Gas, LLC drilled the #1 Claiborne Plantation (SN 250114) in Sec.68, 10S-14E to a total measured depth of 10,670 feet. The well is less than 1/2 mile east of current Ponderosa production in Laurel Ridge Field.

In Terrebone Parish, **Bayou Goreau Field** (**D**), Castex Energy Inc. permitted the #1 SL 21616; DISC 12 RA SUA (SN 250137) in Sec. 34, 21S-13E to a proposed measured depth of 18,870 feet (17,500' TVD). The location offsets several wildcats which were drilled and plugged in the 1970's and 1980's. The nearest production is more than 6 miles to the northeast in Bay Junop Field.

In Vermillion Parish, South Outside Island Field (E), Hilcorp Energy Company

spudded, (03/27/2017), the #2 EXXON MOBIL FEE (SN 250089) in Sec 17, 14S-1E with a proposed total measured depth of 18,275 feet (11,300' TVD). The proposed bottom hole location is approximately 1.5 miles southeast of the #1 well, which was recently completed as the discovery well for South Outside Island Field, (SN 249752) which tested 60 BCPD and 6307 MCFD.

## **COMPLETIONS**

As previously reported, Moon-Hines-Tigrett Operating Company permitted 3 wells to test shallow Miocene sands in St. Helena Parish. These 3 wells have been drilled, plugged and abandoned as dry holes.

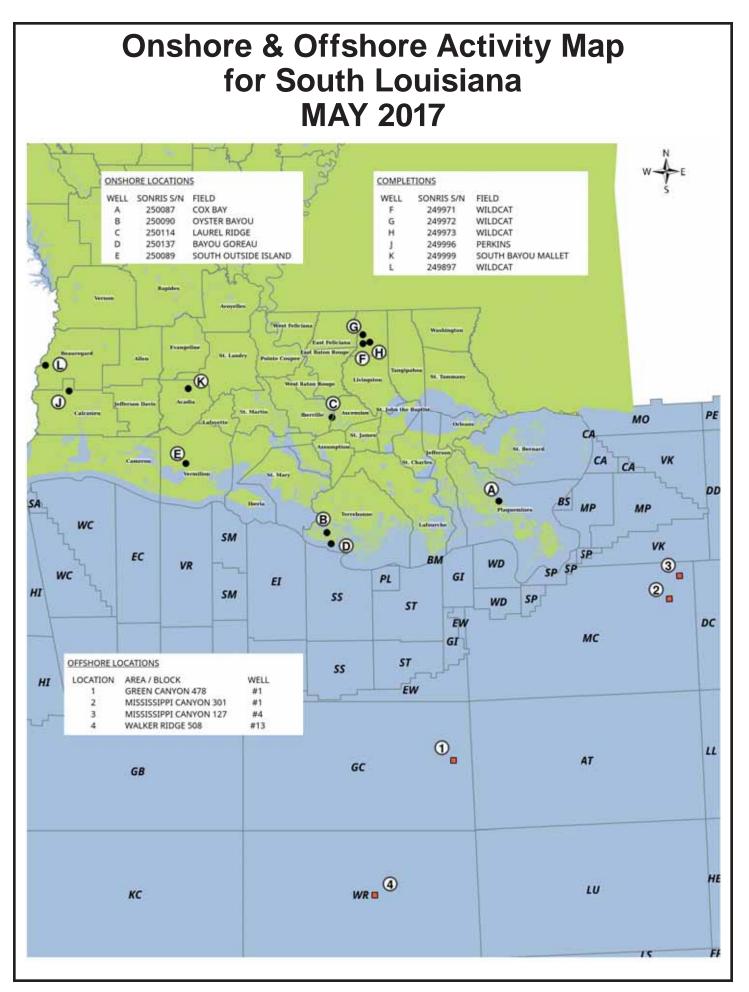
The #1 MIO RA SUA; DENKMANN PC, (SN 249971) (F), was drilled to a total depth of 4100 feet in Sec. 34, 3S-4E.

The #1 MIO RA SUA; DENKMANN ASSOC SC, (SN 249972) (G), was drilled in Sec. 3, 3S-4E, to 4102 feet.

The #1 MIO RA SUA; DENMISS LLC JB, (SN 249973), (**H**) was drilled in Sec. 29, 3S-5E, to 4100 feet.

In Calcasieu Parish, **Perkins Field (J)**, Tri-C Resources has plugged and abandoned its #1 FORESTAR MIN, (SN 249996), at a depth of 10,970 feet in Sec. 6, 8S-10W. It was drilled 1 mile south of production in the field.

LLOX has completed its #1 ANNE BELLARD



LEGG, (SN 249999), as an excellent well flowing 69 BOPD and 4238 MCFD through perforations 11,326 to 11396 feet, overall, in Acadia Parish, **South Bayou Mallet Field (K)**. It was drilled to 11,609 feet in Sec. 27, 7S-1E.

In Beauregard Parish, Forza Operating has plugged and abandoned its **Wildcat** (L), the #1 OLYMPIA MINERALS 25, (SN 249897), at a depth of 3500 feet. It was drilled in Sec. 25, 5S-13W.

## OFFSHORE GULF OF MEXICO SHELF AND DEEPWATER ACTIVITIES

## by Al Baker

During March 2017, the BOEM approved 78 Gulf of Mexico drilling permits. Of these, 18 were for shelf wells and 60 were for deepwater wells. Of the total number of permits, there were 4 new well permits issued in deepwater.

The four new deepwater well permits in March were for **exploration wells**. Two permits were issued to **LLOG Offshore Exploration** for their **Green Canyon 478 #1** and **Mississippi Canyon 301 #1** wells. **Anadarko Petroleum** received a permit to drill their **Mississippi Canyon 127 #4** well, and **Shell Offshore** obtained a permit to drill their **Walker Ridge 508 #13** well.

On March 31st, **IHS-Petrodata** reported that the Gulf of Mexico mobile offshore rig supply stood at 96, which are **2** less than last month. The marketed rig supply consisted of **44** rigs, of which **30** were under contract. The marketed rig supply number is **2** less than reported last month, and the contracted rig supply number is **4** less than last month. The marketed contracted versus total rig supply utilization rate is **31.3%**, while the marketed contracted versus marketed supply utilization rate stands at **68.2%**. By comparison, the March 2016 fleet utilization rate stood at 59.3% (versus 45.8% today) with 67 out of the 113 rigs under contract.

As of March 31st, **BakerHughes** indicated that there were 22 active mobile offshore rigs in the Gulf of Mexico, which is **73.3%** of the rigs under contract mentioned above. This active rigs number is **5** more than reported last month. Of the 22 rigs, **5** are located on the **shelf** and **17** are situated in **deepwater**. The current active rigs count compares to 24 active rigs during the same period last year, representing an **8.3%** decline (minus 2 rigs) in yearly rig activity. As of March 31st, the **BakerHughes** total U.S. rig count stood at **824** rigs **down 57.3%** from the **September 26, 2014 high** of **1931** rigs, but up **420** rigs or **104%** from the **May 20, 2016 low** of **404** rigs. By comparison, the rig count stood at 450 rigs a year ago. Of the current 824 rigs, **662** are **oil rigs** and **160** are **gas rigs.** Texas has the largest number of rigs with 411, which is just under half (49.9%) of the total number of rigs.

On March 14th, Chevron's partner Cobalt International Energy reported an oil discovery in its appraisal well at their Anchor Prospect. The #4 well encountered approximately 800 feet on net oil in multiple inboard Lower Tertiary Wilcox reservoirs. The original Anchor discovery is located in Green Canyon Block 807, which is about 140 miles off the Louisiana coast in 5,180 feet of water. Chevron is operator of the Anchor Unit with 55% working interest. The partnership includes Cobalt International Energy (20%), Samson Offshore Anchor (12.5%) and Venari Resources (12.5%).

On March 22nd. The BOEM held OCS Sale 247 in the Central Gulf of Mexico. A total of 189 bids on 163 tracts were submitted by 24 companies. The shelf drew 22 single bids, whereas deepwater attracted 167 bids on 141 tracts. Twenty of the deepwater tracts received multiple bids. The tract receiving the highest number of bids was Garden Banks Block 1006 with 5 bids; TOTAL E&P USA, INC. was the top bidder for the tract with a winning bid of \$12,600,227. The tract receiving the highest bid was Atwater Valley Block 64 where Shell Offshore Inc. scored a \$24,056,710 winning bid. The total exposure for the sale was \$315,303,884, and \$274,797,434 was the high bid total for the sale. The top five deepwater players included Chevron (20 of 31 bids for \$35.6 million), Shell (20 of 23 bids for \$55.9 million), ExxonMobil (19 of 19 bids for \$21.9 million), Anadarko (16 of 17 bids for \$18.9 million) and Statoil (13 of 15 bids for \$44.5 million). This year's central Gulf sale was an improvement from last year when 148 bids on 128 tracts received \$156,385,610 in high bids.

## Did You Know...

## Shale Oil vs Oil Shale – What is the Difference?

Two very similar terms are being used for very different substances. Oil Shale is a rock that contains significant amounts of kerogen that can yield liquid oil if it is heated in the absence of oxygen. Shale Oil is crude oil that is produced from tight shale formations such as the the Niobrara Shale of Colorado, the Bakken Shale of North Dakota and the Eagle Ford Shale of Texas.

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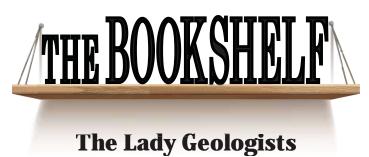


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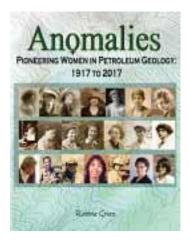
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By Laura Sorey

Within an industry like oil and gas, one frequently encounters claims of something being the "first." The first instance of offshore drilling. The first use of 3D seismic. The first oil boom. The first oil bust. When the industry focuses on important milestones



like these, it's typically reflection as а of technological advances in the instance or. of early oil strikes, strokes of dumb luck that advanced the field as a whole to the next stage of success and discovery. Robbie Rice Gries. former AAPG president and the first woman to hold that

role, undertakes a different kind of first in her recent endeavor. Published to coincide with the 100th anniversary of AAPG and in conjunction with AAPG's Professional Women in Earth Sciences Committee, Gries's book title clearly lays out its intentions. *Anomalies - Pioneering Women in Petroleum Geology: 1917-2017* charts a remarkable and ambitious course over a hundred years of scientific history as it explores the histories of notable female geologists who inhabited a variety of roles within the oil industry.

Through AAPG memberships cards, subject interviews, family accounts, historical archives, and personal correspondence and diaries, Gries has painstakingly compiled an impressive collection of personal accounts that document experiences as varied and complex as geology itself. Rather than following a continuous narrative structure, she divides the stories into sections that pertain to a larger theme such as "Early Female Geologists in Geophysics" and "Early Hires and Affirmative Action" with each woman's individual biography largely independent of one another's. Though the compartmentalized structure pushes the book towards a more encyclopedic tone, the compelling nature of many of the accounts helps communicate the impact of these women's professional and personal lives when framed within the larger organizational structure.

As you progress through the table of contents and approach geologists in the later affirmative action period covered in the book, the narrative point of view often switches to first person as Gries frequently allows the subjects to speak for themselves whenever possible. This device serves a similar purpose as the individualized biographies. It goes a long way towards establishing a personal, empathetic connection with the women as they recount their struggles and triumphs but can interrupt the story's arc if you're trying to read the accounts consecutively. Fortunately, I imagine most readers will use Anomalies to review a few sections at a time to pore over a specific time period or subject of interest rather than consume the entire tome in one sitting à la Harry Potter.

Considering the structure and narrative arc of Gries's work is perhaps necessary in a book review, but it does little to convey the emotional heft of these stories. Anyone who opens this book thinking to find a common experience or tidy thesis statement as to what it really means to be a woman in the oilfield is sure to be baffled at the absence of such a thing. But far from being a weakness of *Anomalies*, I feel that this absence represents a strength. To be sure, many of the stories share commonalities with each other and will likely resonate with female geologists who pick up a copy. Some experienced sexual harassment and professional sabotage while



Robbie Gries

others were treated with professional courtesy and decorum. Others were greeted on the job as just another hand on the crew while others had to work harder than male colleagues to earn the respect befitting their rank. Gries wisely resists the easy temptation to pigeonhole any woman's experience into a specific message other than wanting to ensure that "those who would have been written out of history, be written in."

Ironically, I used to find this variety of experiences frustrating in the conversation about diversity since relying on selective anecdotes of workplace experiences can hamper attempts to objectively discuss harassment, unequal pay, and other topics that women and other minorities continue to face today. Well-intentioned individuals may not appreciate the scope of a particular problem because they someone of their acquaintance didn't have the same experience as the person in question. So in their mind, that constitutes proof that the issue isn't as serious or widespread as others would have them believe. The tremendous range of experiences and personal stories recounted in *Anomalies* represents convincing evidence that the saga of gender equality in the geosciences defies these one-dimensional judgments.

Gries directly addresses the apparent discrepancies between experiences in her epilogue. These pioneering women often had to make their own way and, as Gries puts it, "live within their situation." Sometimes this meant keeping your head down and working through the tough parts while privately reflecting on the frustrations of discrimination in its various forms. Some women were in a



Rebecca "Reba" Byrd Masterson First female member of AAPG

position where they could publicly stand up for themselves and demand treatment as an equal, while others were left with no recourse if held back from a deserved promotion or pay raise. But Gries demonstrates that the experience of one woman does not disprove the relevance and validity of the other. And in this particular case of the pioneering women of the oil industry, their experiences deserve to be remembered. For the heroes of this book were the scientists, business women, explorers, academics, and occasionally adventurers who each helped changed the oil industry and the careers for the women in geoscience yet to come.

Anomalies - Pioneering Women in Petroleum Geology 1917-2017 By Robbie Rice Gries 405 pages. Jewel Publishing LLC, \$50 from AAPG Store

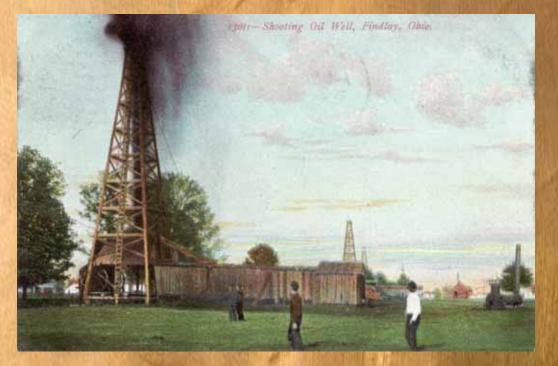
Photos by Ed Picou



Front view of 100 AAPG Women's Wall



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## July 13-15, 2017

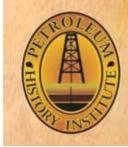
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**PRESENTATIONS – ORAL AND POSTER** Friday, July 14, 2017

Proceedings to be published in the 2017 volume of *Oil-Industry History* 

**FIELD TRIP** Saturday, July 15, 2017

For symposium details, see: <u>www.petroleumhistory.org</u>



## **ABSTRACTS BEING ACCEPTED**

Please send abstracts to: Dr. William Brice - wbrice@pitt.edu or call Marilyn Black - 814-677-3152 ext. 105

## **NOGS Board of Directors Candidates**



## For President Elect: Alex Janevski

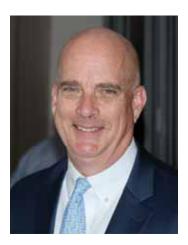
Alex Janevski is a senior geologist for Shell Exploration and Production Company where he started working full-time in 2011 after previously interning in Houston and New Orleans and falling in love with the latter. He is originally from Cincinnati where the fossilrich Ordovician hills and a good teacher inspired a love of geology and paleontology. He earned his B.S. in geology from Case Western Reserve University (2003) and Ph.D. from the University of Michigan in geology (2011) with a focus on invertebrate paleontology. He has spent his time at Shell developing fields that tie back to the Auger Platform and working on near-field exploration opportunities. Alex has been a member of NOGS since 2012 and is also a member of AAPG, SEG, GSA, SEPM, and the Paleo Society. He

serves as the current Vice President of NOGS and as an alternate delegate to AAPG representing NOGS. He is also the co-chair of the AAPG Annual Convention Student Poster Session sponsored by Shell. He enjoys all aspects of geology, particularly the intersection with other branches of science, statistical analysis of large datasets, and fieldwork and fossil-hunting. In his free time, he can most often be found learning how to cook a Louisiana specialty and is an accomplished camp cook.

## For Vice President: Chris McLindon

Chris McLindon has been employed as an exploration geologist in the oil and gas industry since 1980. He received a B.S. in Geology from LSU in 1970. Chris has worked for several companies in the New Orleans area including McMoRan Exploration, Helis Oil and Century Exploration, as well as being self-employed for several years. Chris is currently employed by Upstream Exploration, LLC in Metairie, LA. In addition to NOGS, he is a member of AAPG, GSA, and SIPES. Since 2015, Chris has coordinated the NOGS Fault Atlas research initiative based on providing oil and gas industry knowledge base and seismic data for graduate-level university research on the relationships between near-surface geology, subsidence, and coastal processes. There are currently eight research projects underway at UNO, Tulane and ULL as a result of this initiative.





## For Secretary: Grant Black

Following the earning of a B.S. in Geology from the University of Oklahoma in 1977 and a M.S. in Geology from Oklahoma State University in 1980, Mr. Black worked as an exploration geologist in various basins in Arkansas, Louisiana, Texas, Mississippi, Alabama, and the Rocky Mountains. After a fifteen-year period of living in Shreveport, Louisiana and working for both medium and small independent oil and natural gas producers, he was appointed by then Arkansas Governor Mike Huckabee to serve as the Director of the Arkansas Oil and Gas Commission. An opportunity to return to Oklahoma presented itself, and his career led to working in government affairs for Samson Resources in eleven states within which the company had assets and exploration interests. Mr. Black is a registered professional geologist in the State of Arkansas (#462), an American Association of Petroleum Geologists (AAPG) Certified

Petroleum Geologist (#4133), and a long standing member of the Shreveport Geological Society. During 2015, Mr. Black was chosen to join Chevron in New Orleans to work as Representative of the State Government Affairs team responsible for ten states in the southeast region of the US. In 2017, he was appointed by Louisiana Governor John Bel Edwards to serve on the Louisiana Oilfield Site Restoration Commission. His interest and passion for geology resulted in joining the New Orleans Geological Society and engaging in the various activities that the society provides.

## For Treasurer: Margaret McKinney

Margaret McKinney has been a geologist with TGS since 1999. For the past twelve years she has served as Project Manager overseeing operations for TGS' Gulf of Mexico OCS new drill well log management agreement with BSEE. Prior to signing on with TGS, she worked as a log analyst with Chevron for sixteen years. She received her B.S. in Geology from Virginia Tech in 1979 and was a member of the Geophysics Department research team studying heat flow and heat generation in the Piedmont and Atlantic coastal plain. She has been a resident of the New Orleans area since 1983 and a NOGS member since 2007.





## For Editor: Laura Sorey

A native of Jackson, Mississippi, Laura earned a B.S. in Geology from Millsaps in 2012. After completing her undergraduate degree, she moved to Louisiana and received her M.S. in Geology at LSU in 2014 (much to the consternation of Ole Miss alumni in her family). Laura worked in Chevron's Gulf of Mexico office in Covington as a development geologist on the Bay Marchand team where she had previously completed an internship. In 2015, Laura joined NOGS as Editor-Elect for the NOGS LOG before coming on as Editor in 2016. Much of Laura's childhood was spent on road trips across the country as her mother (a geoscientist herself) read excerpts aloud from the Roadside Geology book series. In spite of this, Laura developed a passion for geology and for technical and expository writing that she has enjoyed exploring through her work with NOGS and other New Orleans organizations.

## For Director: David Reiter

David E. Reiter graduated from the University of New Mexico in 1980 with an M.S. in Geology. He began his career with Shell Oil Co. in New Orleans as onshore exploration geologist. In 1984, he joined ODECO Oil & Gas (now Murphy E&P Co.) as Exploration Geologist working primarily the central offshore Louisiana shelf area. He later moved into development geology with responsibility for several GOM shelf and deepwater fields. In 2005, Mr. Reiter joined Dominion Exploration and Production Company as Development Geophysicist in their GOM Shelf Exploration Group. After a brief employment as Deepwater Exploration Geophysicist with EPL in New Orleans, he joined ENI Production Co. in 2008 as Reservoir Geologist and was later transferred to Houston in 2009. David joined Woodside Energy in Houston in 2011 as Development Geophysicist and then returned to New Orleans in mid-2012 as a Deepwater Development Geophysicist with Stone Energy.



Mr. Reiter has been an active member of NOGS for the past thirty-five years. He has served on the Best Paper, Nominating, and Entertainment Committees and is currently chairman of the Office Operations and Audit Committees. David was past NOGS President from July 2015– June 2016 and is currently President of the NOGS Memorial Foundation Board. In 2008, Mr. Reiter was elected to serve as President of NOGS for the 2009–2010 fiscal year but had to resign as President in July 2009 due to being transferred to Houston. David has served on several organizing committees for local conventions, including the 1997 and 2005 GCAGS Conventions, the 2000 and 2009 AAPG Conventions, and the 1996 SPWLA International Symposium. He was past V.P.-Public Relations, Treasurer, and President of the SPWLA New Orleans Chapter. David is an active member of NOGS, AAPG, and SGS.

<u>Note on Editor-Elect</u>: The nominating committee is still looking for a candidate to serve as 2017-2018 Editor-Elect. If you're interested in the role or would like to learn more, please contact Jim Zotkiewicz at jimzot38@zotoil.com or Laura Sorey at nogseditior@gmail.com.

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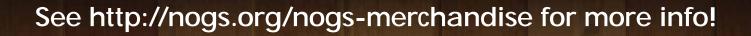
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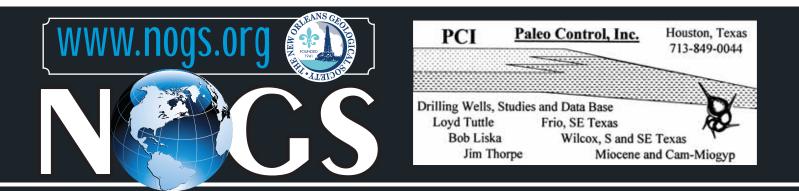




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