

# NOGS LOG

OCTOBER 2020  
Volume 61 No. 4

**NOGS**

*Virtual Meeting*

Monday, October 5, 2020





# NOGS OCTOBER MEETING

MONDAY, OCTOBER 5, 2020 11:30 AM  
ZOOM MEETING



POST COVID EVOLUTION OF UPSTREAM  
E&P INDUSTRY

*Ravi Chhibber*

Post COVID evolution of Upstream E&P industry and its needs for expertise. Global oil & gas industry has been in contraction for some time now. The pandemic has accelerated this shrinkage by affecting the demand resulting in even more uncertain future for the industry. By most estimates, the fossil fuel consumption is expected to peak in early to mid-2030s. There is already a lot of movement in reducing use of fossil fuels, but the pace will be largely driven by a handful of factors and technologies. In all this uncertain future, there are however opportunities for the petro-technical experts to evolve, and play an important role in shaping the future energy-mix. This talk will provide a wide-angle view of the transformation of the industry that has been accelerated due to the pandemic. Will explore drivers of change (trust challenge, retiring workforce, new business models), the mega-trends in the industry (digitalization, EOR, Natural gas), technologies that will be critical to adopt (artificial intelligence, remote operations, carbon management), and the skills that will be necessary to navigate this uncertain future. Oil and gas is likely to be a major source of energy for decades to come, but how the industry responds to its most profound challenges will determine the role oil and gas will play in future global economic prosperity and mobility.

# IN THIS ISSUE



## On the Cover

### White Cliffs of Dover

The White Cliffs of Dover, part of the North Downs formation, is the region of English coastline facing the Strait of Dover and France. The cliff face, which reaches a height of 350 feet, owes its striking appearance to its composition of chalk accented by streaks of black flint.

The cliffs are made from chalk, a soft white, very finely grained pure limestone, and are commonly 300-400m deep. The chalk layers built up gradually over millions of years. They're formed from the skeletal remains of minute planktonic green algae that lived floating in the upper levels of the ocean.



## *From the Editor...*

Thanks to all those who continue to contribute to the monthly LOG. If you have any suggestions for future issues or have an article/photo(s) to contribute, please email me at [cmiller@ocsbbs.com](mailto:cmiller@ocsbbs.com). We would certainly love your input and any additional LOG content to be considered that may be of interest to NOGS members.

*Charlie*



Charles Miller III  
NOGS LOG Editor

OCTOBER



JOHN R. DRIBUS

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## A MESSAGE FROM NOGS PRESIDENT

To members and friends of the New Orleans Geological Society:

As I write my President's letter today, I see that local universities, colleges and schools have opened up on-line and in the classroom, while announcements for webinars and virtual conferences continue to flood my email in-box. These are all signs that a lot of people are working very hard to establish a new normal in these stressful times. Louisiana's governor has just moved us to Phase Three until Oct 9th essentially meaning that venues like restaurants, churches, gyms and other businesses can open at a maximum of 75 percent of their occupancy, with social distancing practices in place. We are still urged to wear our masks, wash our hands, and keep the distance, as everyone works together to exert more control over the spread of this virus. For details on what Phase Three means, please go to <https://gov.louisiana.gov/index.cfm/newsroom/detail/2679#:~:text=Phase%203%20also%20prohibits%20the%20spread%20of%20COVID%2D19>. or visit the Louisiana Department of Health website at <http://ldh.la.gov/Coronavirus/>.

The result of these restrictions for NOGS is that we will still hold our monthly meetings on-line with ZOOM talks for at least a couple of more months. We are watching how things progress in the area, and hope to return to lunches as soon as we can do so safely. Our on-line "Zoom-inar" series continues to go well. I hope you were able to attend the talk on September 14th by Ryan Weber on mega tsunamis which covered events like the Santorini volcanic eruption and the Chicxulub impact in the Yucatan. Next month, Ravi Chhibber, recently retired from the digital exploration team at Schlumberger, will talk to us about the digital evolution of petroleum geoscience. I'm looking forward to that talk, because this is a subject Ravi knows very well.

Looking at the calendar, I see we have GEOGULF 2020 coming up at the end of the month at the Lafayette Petroleum Club. I also see the NOGS/PLANO golf tournament coming on October 12th at Beau Chen in Mandeville. Have you signed up your team yet, or sponsored a hole? During Thursdays in October the HGS will be holding its African Conference on-line with a great line-up of interesting technical talks, and the New Orleans Deep Water Technical Symposium will be held on-line the mornings of November 9-13. As you can see, there are lots of great opportunities in the next few months to hear some interesting presentations, and even get out a little bit at the golf tournament and over at Lafayette.

I close my letter today thanking everyone who has paid their dues, and will participate in our golf tournament, and other activities. This week the NOGS Memorial Foundation board is reviewing nominations for the 12 scholarships totaling \$30,000.00 that we will award to 4 students each from LSU, Tulane, and UNO. Your support of NOGS has enabled this scholarship program to help these worthy students with their geoscience educations at local schools.

Stay safe NOGS!

Regards,  
John Dribus





## NEW ORLEANS GEOLOGICAL SOCIETY MEMORIAL FOUNDATION INC.

**The NOGS Memorial Foundation Scholarships are granted each year to those students who have demonstrated exceptional talent in or commitment to their geologic studies and projects. It is the policy of the Memorial Foundation to posthumously name these scholarships after those members whose own extensive contributions to the profession have been particularly praiseworthy.**

**Lee Hilliard Meltzer for expertise in oil and gas appraisal and exploration, as well as manifold and unstinting support of and service to - from AAPG to NOGS - the regions professional geologic organizations.**

**James Allen "Al" Gilreath for his work as chief tool developer of down-hole instrumentation and 'pattern' interpretation, earning him, world-wide, the title, 'Mr. Dipmeter'.**

**Richard W. "Dick" Boebel for his outstanding abilities as an oil and gas finder and in being a unique individual who was most generous of his time and talent to the industry, his peers, and in his support of many professional organizations.**

**George W. Schneider, Sr. for exceptional leadership in exploration activities and for being a positive force in establishing the New Orleans Geological Society and serving as its first president in 1941-42.**

**Jules Braunstein gained wide recognition in the oil and gas industry not only for exceptional technical expertise but also as an exacting editor. His long career was conspicuous for selfless devotion and was carried on by his surviving wife, Olga, in her bequeathal of the residue of their estate to NOGS Memorial Foundation Scholarship Fund.**

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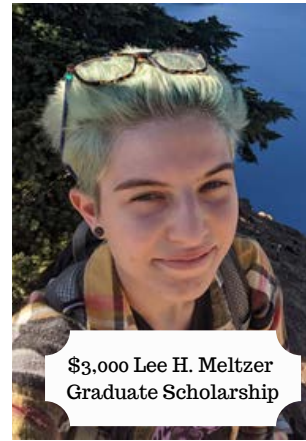
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## 2020 Scholarship Recipients



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### Rachel Gnieski

Rachel Gnieski graduated from Jupiter High School in May 2014 and enrolled in Palm Beach State College the following fall to save up money to attend a four-year university. While in community college, she was awarded a scholarship for her participation in the Mathematics Olympics, a statewide competition for public community college students. After receiving her associates in arts at Palm Beach State College, she moved to Baton Rouge and enrolled into Louisiana State University, and majored in geology in the fall of 2016. Learning about early Earth through geochemical methods peaked her interests, so she decided to do undergraduate research with Dr. Darrell Henry. She completed an undergraduate thesis at LSU titled "Metamorphosed Ultramafic Rocks of the Beartooth Mountains MT/WY: Evidence for Multiple Thermal and Fluid Overprints." Receiving her B.S. in geology from LSU spring 2019, she was offered a TA position at LSU and she continued her MS with Dr. Darrell Henry in the fall of 2019.

### Jeffrey Duxbury

Jeffrey Duxbury is a PhD Student at LSU's Geology & Geophysics Department studying the sedimentology of fluvial deltas under Dr. Sam Bentley in conjunction with the Coastal Studies Institute. His research involves the temporal scales and stratigraphy of mass wasting regimes constrained within the Mississippi River Delta Front and their relationship to paleo-delta analogues. Jeff is a native of upstate New York. After receiving a Bachelor's degree in Marine Biology from the University of Rhode Island in 2011, he was commissioned as a 2nd Lieutenant into the United States Army Chemical Corps where he served as a subject matter expert on WMD's both domestically and abroad. He subsequently received a Bachelor's of Science in Geology from Louisiana State University, and then completed U.S. Army Initial Entry Rotary Wing training. He currently serves as a UH-60 Blackhawk pilot for the Louisiana National Guard.

### Jonothan Patrick Chappell

Jonothan Patrick Chappell is a third-year undergraduate student at Louisiana State University majoring in geology. Geology has been his passion for nearly his entire life. Like many of us, he began as a rock collector and his interest grew after he delved into geologic literature. From that point on, his knowledge became his pride.

Within the first month of entering LSU, he became an employee within Dr. Bentley's sedimentology lab. As an undergraduate, academics were the utmost priority and that was also reflected through Dr. Bentley. He started his research career as an assistant for other PhD students' research: first, running sediment samples through a germanium gamma detector; then, collecting water column samples from along the flood plain to evaluate volumetric masses of sand, silt, and clay to determine how to redirect the Mississippi to preserve the coast and wetlands. In addition, his classwork has provided the necessary background to enter the field of geology. There are many more subcategories of geology to explore before choosing one to pursue as a career. Thank you, NOGS Memorial Foundation, for providing the means to do so!

### Wendy Bogil

Wendy Bogil is a senior studying Geology at Louisiana State University. During her time at LSU, she has acted as treasurer for the LSU Geology club, she has been selected as outstanding junior of the year for the Department of Geology and Geophysics, and she is currently working toward the completion of an undergraduate thesis. Her research focuses on the use of electron microprobe analyses and laser ablation techniques to perform provenance studies of the Apennine Mountains in Italy, primarily using rutile and zircon grains. Though she finds all aspects of Geology to be fascinating, she is most interested in mineralogy and geochemistry. After completion of her bachelor's degree, she plans to further her education at LSU and obtain her master's, and eventually her PhD, in geological sciences.





# 2020 Scholarship Recipients

## McKenna Price-Patak

McKenna Price-Patak is a rising Senior at Tulane University, majoring in Environmental Earth Science and International Relations with a minor in Business. McKenna looked forward to her summer 2020 internship with NASA's SARP program where she did environmental research. While at Tulane, she has worked as a research assistant for Mead Allison in the Department of River-Coastal Science and Engineering. Last fall, McKenna studied abroad in Morocco where she took International Relations classes while assisting Fulbright Scholar Alex Kolker with research on Sea Level Variations in the Western Mediterranean. During her time at Tulane, she has been a student government Senator for the School of Science and Engineering, she is a member of Phi Alpha Delta (a pre-law fraternity) as well as Chi Omega Sorority, and captain of an intramural volleyball team.

## Omolola Akintomide

Lola was born and raised in Ibadan, Nigeria. She received a B.Sc. in Civil Engineering from Obafemi Awolowo University, Nigeria.

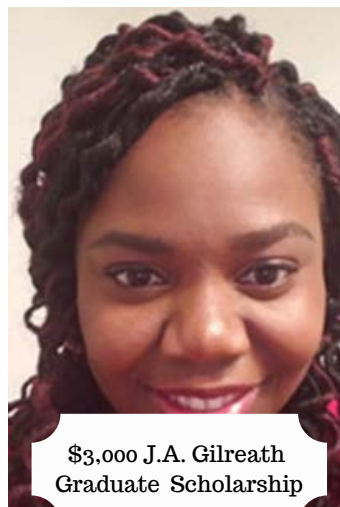
In 2010, she enrolled for a master's program in Environmental Engineering at the University of Arkansas and graduated in 2012. After working for four years in Midland Texas, as a wellsite geologist, Lola desired to learn more about geology and its interaction with water. She began a Ph.D. program in 2017 at the Earth and Environmental Sciences Department at Tulane University working with Dr. Karen Johannesson's biogeochemistry research team. Here, she is researching the impact of changes in redox conditions on the trace metals geochemistry in riverine and marine environments. Lola plans to pursue a career as an environmental geologist/engineer specializing in the sources of surface and groundwater contamination and its treatments.



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\$3,000 J.A. Gilreath  
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## Abdul Wahab

Abdul Wahab is from the northwestern tribal region of Pakistan. The northwestern landscape in Pakistan contains numerous mountain ranges, and therefore growing up, he was fascinated with different landscapes. This early fascination with landscapes shaped his career interest and he obtained a Bachelor's in Geology from the University of Peshawar. Soon after, he applied for the Fulbright Scholarship to pursue graduate school in the United States of America. Fortunately, he received the Fulbright award which funded his Master's in Geology from the University of Kansas. During his Master's, he focused on quantifying petrophysical attributes of a mid-Cretaceous isolated carbonate platform. After taking a short course on deep-water sediment transport, he developed an interest in turbidity currents and their ability to transport sediments to 100s of kilometers into the deep ocean. The focus on submarine fans led him to pursue a PhD in geology at Tulane University. Abdul is working with Dr. Kyle Straub in collaboration with the Process Stratigraphy group at ExxonMobil to better understand controls on the organization of stratigraphy in submarine fans. He is leveraging depth-average numerical simulation of turbidity current interactions with antecedent topography to understand how forces within turbidity currents influence deposition on submarine fans. This work will aid stratigraphic predictions from a priori knowledge of boundary conditions, and the interpretation of paleo-flow fields from preserved deep-water stratigraphy, which will aid the reconstruction of environmental signals.

## Samantha Hilburn

Samantha Hilburn is a senior Honors student at Tulane University double-majoring in Geology and Environmental Studies with a minor in Economics. She is grateful for her childhood experiences hiking and backpacking with family that cultivated her love of nature and strong affinity for Earth science from a young age. Samantha now leads fellow students on hiking, backpacking, canoeing, and rock-climbing excursions across the Gulf South as a manager and trip leader for Tulane Outdoor Adventures. Samantha also works as a peer mentor for the Tulane Honors Program and an undergraduate research assistant in Dr. Cindy Ebinger's geophysics lab, where she is learning the ropes of seismic data collection and analysis to investigate the influence of extractive industry operation on induced seismicity near her home in northwest Louisiana. In the future, Samantha hopes to study how anthropogenic practices influence Earth systems and amplify risks associated with natural hazards. She ultimately aims to employ her background in both physical and social sciences to more effectively communicate the urgent necessity of prevention and mitigation measures against global climate change.



# THE UNIVERSITY of NEW ORLEANS

## 2020 Scholarship Recipients

### Charley Cameron

Charley Cameron is pursuing an undergraduate degree in the Department of Earth and Environmental Sciences at the University of New Orleans, with a concentration in Geosciences. She was born and raised in the northeast of England and moved to the United States in her late teens. She studied Film Video and New Media at the School of the Art Institute of Chicago before moving to New Orleans to work as Media Coordinator for a local non-profit, Common Ground Relief. There, while participating in the organization's wetlands restoration projects, she first became interested in the coastal land loss issues facing Louisiana. She then went on to work variously as web designer, videographer, and writer; she also spent several years as an editor at a sustainable design and technology publication. In 2019 Charley enrolled at UNO to develop a greater understanding of some of the environmental issues she had covered as a writer. She promptly determined that her particular area-of-interest lies in coastal geology and plans to pursue graduate studies in that field once she has completed her undergraduate degree. Charley currently works as an intern for the Water Institute of the Gulf's Applied Geosciences team and will be a senior in the fall 2020.

### Daniel Burke

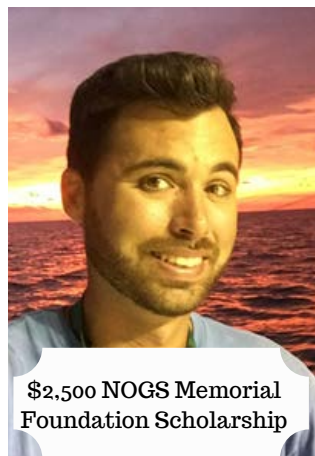
Daniel Burke is a native of the New Orleans area and grew up hunting and fishing with his family in Louisiana's coastal wetlands. Along the way he developed a passionate interest in the organisms and the habitats in which he encountered them. This ultimately resulted in his attending Louisiana State University in Baton Rouge, from which he graduated in 2010 with a bachelor's degree in Fisheries Management and a minor in Oceanography and Coastal Science. After graduation, he moved back to New Orleans and continued to work as a bartender while he sought out more relevant employment. Eventually he was hired as a Fishery Observer for the National Marine Fisheries Service. Over six years, he logged 800+ days at sea collecting data on commercial fishing vessels in the Gulf of Mexico. This was a fascinating "first real job", but he recognized the time to leave it when he was admitted into a graduate program in the Department of Earth and Environmental Science at the University of New Orleans. As of this writing, he is finishing coursework and teaching for the summer semester. Despite challenges posed by COVID-19, he is still optimistic and excited to continue with this program as well as his thesis research. After graduating, he hopes to find employment in the fields of fisheries/coastal science here in the New Orleans area.



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\$2,500 NOGS Memorial  
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\$3,000 Richard W.  
Boebel Graduate  
Scholarship

### Zoe Vittur

As a Louisiana native, Zoe Vittur's interest and passion for our wonderful planet began early in her life. She declared that she wanted to become a marine biologist when she was only eight years old. Oceans and the life within them had always been a source of wonderment for her, but her college career started in 2015 with studying health services with an end goal of becoming a registered nurse. Shortly after finishing her medical assistant program at a technical school, her wish to work in Earth sciences resurfaced with an eye-opening documentary about plastic pollution. She immediately switched her focus and enrolled at Delgado Community College and pursued her transfer degree to University of New Orleans for Earth and Environmental Science. She is now a junior at UNO with a focus on coastal restoration. She hopes that in the future she will be part of something far bigger than herself. Zoe's wish is to become a part of an institute, like NASA, that researches and implements groundbreaking green innovations that enhance the livelihood of everyone who suffers from environmental issues such as land loss, pollution, and natural disasters.

### Sarah Noel

Sarah Noel grew up in Alaska and then moved to Colorado to pursue a B.S. in Petroleum Engineering, with a Geological Engineering minor, at the Colorado School of Mines. After graduation, she worked in the Alaska North Slope Oilfield for Schlumberger as a Measurements and Logging While Drilling Field Engineer. Her nearly two-year field career with Schlumberger afforded her the opportunity to complete an intensive technical training program in the United Arab Emirates, drill a variety of development and exploration wells, and most importantly, interact with professionals from a wide range of backgrounds. Working closely with these individuals inspired her to pursue her passion and apply for entry to higher education in the geosciences.

Sarah quickly became immersed in sediment transport, and having spent years at the proverbial sediment source (mountainous highlands), it seemed natural to continue education at the other end of the spectrum. Ultimately the decision to come to New Orleans was largely influenced by her husband who was doing very well with his employer in the petroleum industry. New Orleans has proven to be a colorful, fun home during the past year for them and their crew of pets. The opportunities at the University of New Orleans have encouraged and challenged her to broaden her horizons. She hopes the future will bring continued education in the geosciences and looks forward to a multifaceted career straddling industry and academia.





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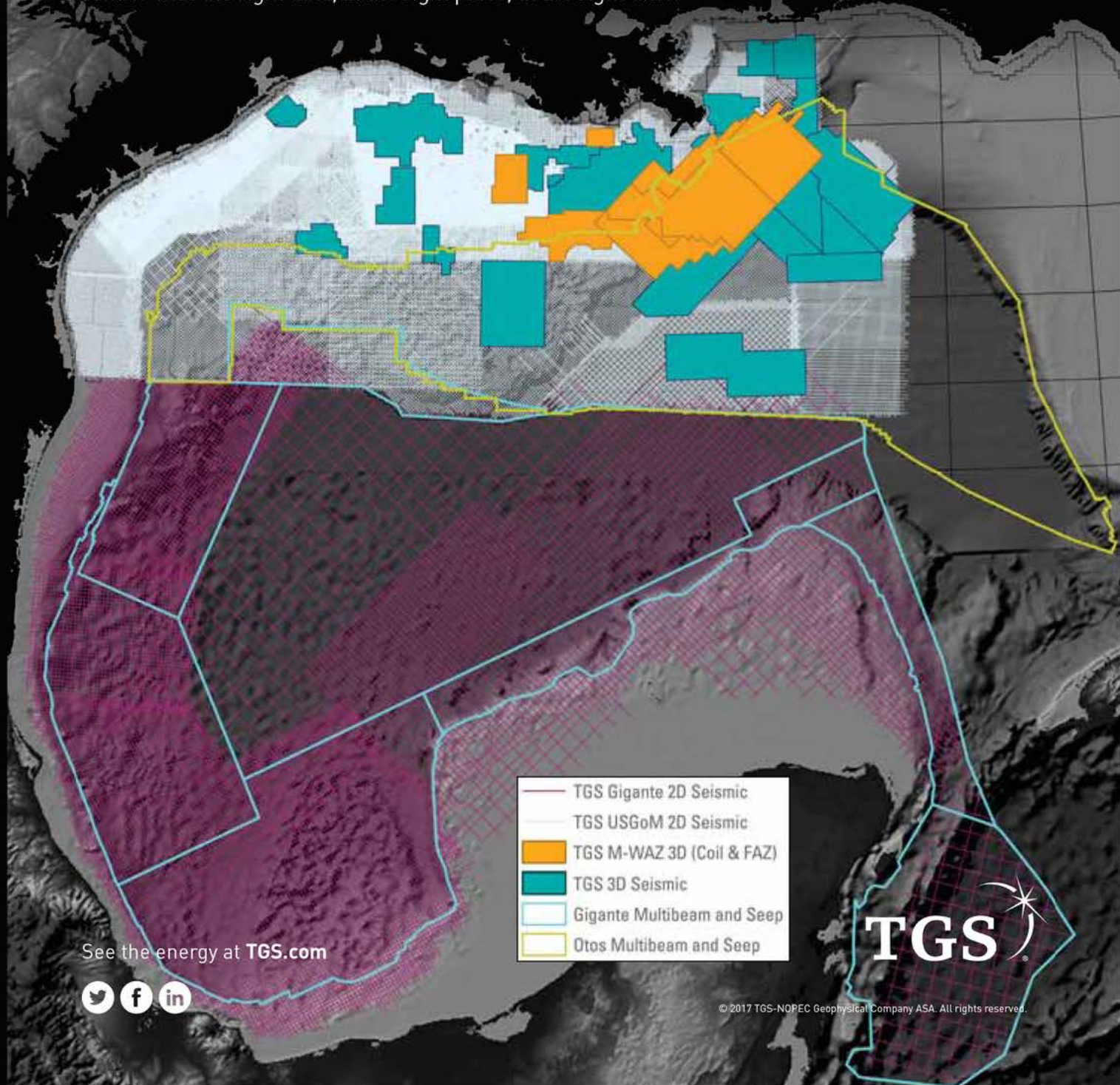


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# PICTURE FROM THE PAST



**Ann Duffy and John Skinner having a good time at the NOGS Kick Off Party at Rock 'n' Bowl on October 14, 2017**

*Submitted by  
Ed Picou, Chairman - Historical Committee*



# advertising rates

The New Orleans Geological Society was organized on October 3, 1941, as a non-profit organization for the purpose of facilitating the development of the profession and science of Geology, with specific emphasis to exploration and production of petroleum and natural gas. Secondary related objectives include the dissemination of pertinent geological and environmental technological data, and the maintenance of a high standard of professional conduct of its members. The full history of the Society can be found at [nogs.org](http://nogs.org).

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# DRILL BITS

## OFFSHORE GULF OF MEXICO SHELF AND DEEPWATER ACTIVITIES BY AL BAKER

During August 2020, the U.S. Department of the Interior Bureau of Safety and Environmental Enforcement (BSEE) approved 60 Gulf of Mexico (GoM) drilling permits. Four of the permits were for shelf wells, and the remaining 56 permits were for deepwater wells. Of the total number of permits, there were 4 new well permits issued, all in deepwater.

Three of deepwater new well permits were for exploration wells, and 1 new well permit was listed as Other. Shell Offshore was given a permit for their Alaminos Canyon 815 #SA-6 exploration well. Union Oil Company of California (Chevron) was granted a permit for their Walker Ridge 678 #IS-3 exploration well. BOE Exploration & Production was awarded a permit for their Green Canyon 895 #1 exploration well. The permit for the well listed as Other was given to Shell Offshore for their Mississippi Canyon 765 #PI-3.

On August 27th, IHS-Petrodata indicated that the GoM mobile offshore rig supply stood at 63, which are 2 less than last month. The marketed rig supply consisted of 36 rigs, of which 24 were under contract. The marketed rig supply was 2 less than month, and the contracted rig supply number was 1 less than last month. The marketed contracted versus total rig supply utilization rate stood at 57.1%, and the marketed contracted versus marketed supply utilization rate stood at 66.7%. By comparison, the August 2019 total fleet utilization rate stood at 59.7% with 43 rigs under contract out of the 72 rigs in the fleet.

On August 28th, Baker Hughes reported that there are 13 active mobile offshore rigs in the GoM, which is 54.2% of the rigs under contract mentioned above. This active rigs number is 1 more than reported last month. Currently, all 13 rigs are drilling in deepwater. They include 5 rigs in the Mississippi Canyon Area, 3 rigs in the Alaminos Canyon Area, 2 rigs in the Garden Banks Area and 1 rig each in the Green Canyon, Ewing Bank and Walker Ridge Areas.

According to the Baker Hughes weekly rotary rig count report, the U.S. total rig count reached its bottom at 244 rigs during the week ending August 14th after declining since March of this year. By August 28th, the Baker Hughes total U.S. rig count had raised 10 rigs to a total of 254 rigs, which are 3 more rigs than reported at the end of July 2020. Of the 254 rigs, 180 (70.9%) are oil rigs and 72 (28.3%) are gas rigs. The remaining 2 rigs are listed as miscellaneous. A year ago, there were 904 rigs working in the U.S. inferring that the current rig figure represents a 71.9% decline in rigs year over year. Texas continues to have the largest number of rigs presently with 107, which is 42.1% of the total number of rigs in the U. S. Louisiana currently has a total of 34 rigs, up 4 rigs from last month. Nationwide, Louisiana ranks third in the rotary rig count. New Mexico continues to rank second with 46 rigs.



# NOGS 2020

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## NEW ORLEANS GEOLOGICAL SOCIETY MEMORIAL FOUNDATION INC.

Founded March 14, 1978, the mission of the New Orleans Geological Society Memorial Foundation is to promote earth science related or scientific purpose by granting of scholarships to outstanding Geology students at the universities in Southeast Louisiana having a comprehensive curriculum and offering a degree in Geology. The

Bill Craig Memorial Fund provides for any earth science related educational or scientific purpose that is a direct benefit to grades K-12 teacher or teachers within the Greater New Orleans Area. This area is defined as the area encompassing New Orleans, Jefferson, Plaquemines, St. Bernard and St. Tammany Parishes.

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Alex Janeveski



# Oil Industry Headlines .....In The News

## (September 2020)

**9/1/2020 - Goldman Expects Oil To Reach \$65 Next Year** - Goldman Sachs expects Brent crude to reach \$65 a barrel in the third quarter of 2021, although it could end the year lower, at \$58 a barrel, according to Goldman Sachs analysts. In a note, they also said they expected West Texas Intermediate to rally to \$55.88 a barrel by the third quarter of next year, up from \$51.38 a barrel in earlier forecasts, Business Insider reports. "There is a growing likelihood that vaccines will become widely available starting next spring, helping support global growth and oil demand, especially jet," the Goldman analysts said.

**9/1/2020 - Top envoy says U.S. preparing tighter oil sanctions on Venezuela** - The Trump administration is looking to tighten oil sanctions on Venezuela in the near future, top U.S. envoy for the country told Reuters on Monday, by potentially removing exemptions that allow some oil companies to exchange Venezuelan crude for fuel from the OPEC member. U.S. President Donald Trump has ramped up sanctions on Venezuela's state-run PDVSA, its key foreign partners and customers since it first imposed measures against the company in early 2019, seeking to oust the left-leaning Venezuelan President Nicolas Maduro after a 2018 re-election considered a sham by most Western nations.

**9/3/2020 - Chevron restores production at five Gulf of Mexico platforms** - Chevron Corp said it has redeployed all essential personnel and restored production at five of its six operated platforms in the Gulf of Mexico that were shut due to storms Marco and Laura. "Chevron's onshore facilities are operating and continue to supply our customers." The company said will restart process on Aug. 27.

**9/3/2020 - US working natural gas volumes in underground storage rise by 35 Bcf: EIA** - US natural gas stocks increased mainly in line with analysts' expectations at about half the five-year average build, and Henry Hub futures showed mixed results following the release of the storage report as a power outage at an LNG terminal could slow export demand recovery during September. Storage inventories increased by 35 Bcf to 3.455 Tcf for the week ended Aug. 28, a EIA report showed Sept. 3.

**9/10/2020 - BP completes start-up at Atlantis Phase 3 in the US Gulf of Mexico** - BP completed start-up work on its Atlantis Phase 3 project in the US Gulf of Mexico, a development hailed by the supermajor for making progress "during a pandemic and in hurricane season" as it drew first oil. BP approved the \$1.3 billion expansion at its deep-water Atlantis field in January last year. The company's first major project start-up of 2020 has now been completed "safely and on time" despite some challenges.

**9/11/2020 - Insight from Washington: US oil policy at stake in November presidential election** - The US presidential election in November presents a stark contrast for the next four years of US oil policy that could shape supply and demand dynamics domestically and abroad. President Donald Trump is expected to continue a deregulatory push to expand federal areas to drilling, ease permitting for pipelines and export projects, remain a vocal player in supply negotiations among OPEC+ producers, and keep a tight hold on sanctions against Iran and Venezuela.

**9/14/2020 - Tropical Storm Sally Forces Drillers To Evacuate Gulf Of Mexico Oil Platforms** - Oil companies have started evacuating staff and shutting in oil production at about half a dozen platforms in the Gulf of Mexico ahead of tropical storm Sally, which is expected to make landfall in Louisiana as a hurricane. According to Reuters, BP, Equinor, Chevron, and Murphy Oil are the companies that shut in production, while Shell suspended some drilling operations yesterday but has not made changes to production.



## COVID-19 Impacts to Small Businesses in the Mining and Oil & Gas Sectors

To capture COVID-19 impacts to small businesses, the U.S. Census Bureau deployed the weekly Small Business Pulse Survey (SBPS) from April 26, 2020 to June 27, 2020. The survey specifically targeted non-farm, single location businesses with receipts greater than or equal to \$1,000 and with less than 500 employees. The survey provides industry sector data about business operations, revenue, financial assistance, supply chain disruptions, and employee staffing.

Although the data is aggregated at broad industry sector and sub-sector levels, it can be used to examine trends in COVID-19 impacts to small businesses within the *mining and oil and gas* industries, specifically *oil and gas extraction*, *mining*, and *support activities for mining and oil and gas*. The survey's data provides a backdrop against which to compare the finer-resolution data from the AGI Geoscience COVID-19 study.

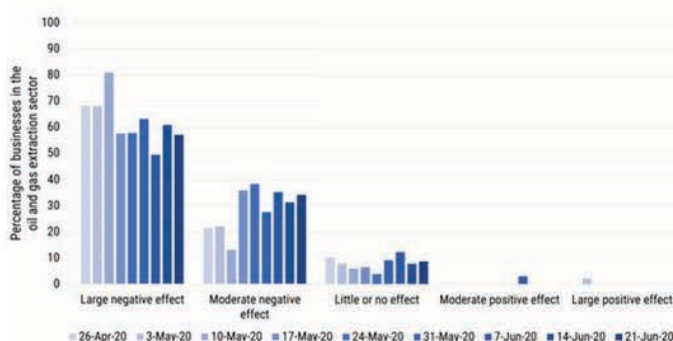
### Small businesses within the oil and gas extraction sector

Responses from small businesses in the *oil and gas extraction* sector were highly variable, with moderate to large standard errors suggesting a small population sample and/or perhaps different cohorts of businesses participating intermittently during the survey period.

#### Overall impacts

Over half of small businesses in this sector reported large negative effects from the COVID-19 pandemic, with the percentage decreasing from 68% at the end April to 57% by the end of June. Over the same period, the percentage of businesses reporting moderate negative effects increased from 22% to 34%, suggesting a lessening of the magnitude of impacts from COVID-19. The percentage of small businesses in this sector reporting little or no effect from COVID-19 varied between 4% and 12% through the survey period.

Overall, how has this business been affected by the COVID-19 pandemic?



Credit: AGI, data derived from the U.S. Census Bureau, Small Business Pulse Survey

#### Financial assistance

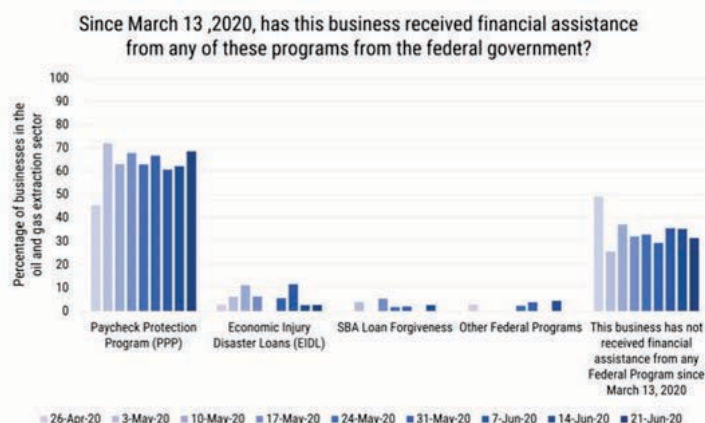
The Paycheck Protection Program, Economic Injury Disaster Loans and banks were the most common sources from which businesses requested financial assistance in this sector. Between 20% and 30% businesses did not request financial assistance from any sources since March 13th, and by the end of June nearly 30% of businesses had not received any financial assistance from federal programs.

Since March 13, 2020, has this business requested financial assistance from any of the following sources?



Credit: AGI, data derived from the U.S. Census Bureau, Small Business Pulse Survey

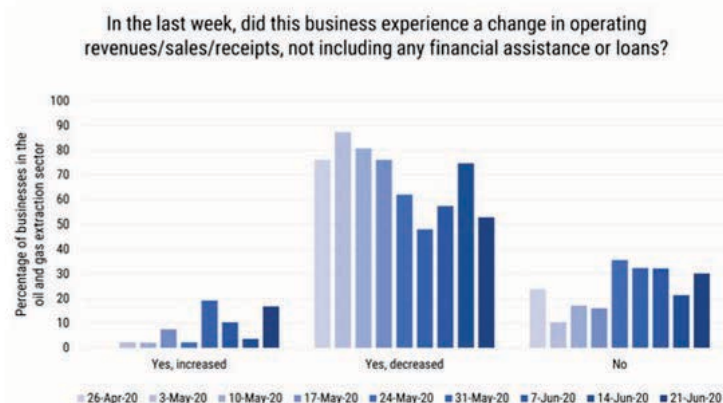




Credit: AGI, data derived from the U.S. Census Bureau, Small Business Pulse Survey

## Financial health

The percentage of small businesses reporting declines in operating revenues fluctuated between 48% and 87% throughout the survey period, peaking in early May and mid-June. Low operating revenues and cash on hand also fluctuated over this period showing similar trends. The percentage of businesses reporting total operating revenues less than \$50,000 fluctuated between 70% and 45% between late April and late June, with peaks occurring in late April and mid-June. The percentage of businesses reporting one month or less in cash on hand fluctuated between 10% and 30%, with peaks in mid and late May. Furthermore, over 90% of businesses reported that they did not miss any loan payments and over 84% reported not missing any other scheduled payments over this period.



Credit: AGI, data derived from the U.S. Census Bureau, Small Business Pulse Survey

## Business operations

Interruptions to business operations was minimal across small businesses in this industry. Less than one-third of

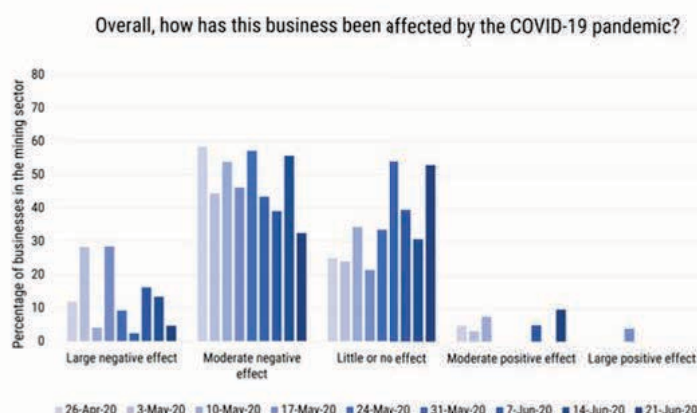
businesses reported temporarily closing locations for at least one day per week, and staffing remained robust with nearly 90% or more of businesses reporting no reduction in the number of employees. Additionally, businesses did not report a substantial impact in the total number of hours worked by paid employees. At the end of April, 32% of small businesses in this sector reported a decrease in the total hours worked by employees and at the end of June, this percentage declined to 15%. In addition, the percentage of businesses reporting supply chain disruptions over this period fluctuated between 20% and 30%.

## Small businesses within the mining sector

Similar to the *oil and gas extraction* sector, responses in the *mining* sector were also highly variable, with moderate to large standard errors suggesting a small population sample and/or perhaps different cohorts of businesses participating intermittently during the survey period.

## Overall impacts

Between 40% and 60% of small businesses in the *mining* sector reported moderate negative effects from the COVID-19 pandemic between late April and early June 2020 with a general decline in those reporting moderate effects since mid-May. Concurrently, the percentage of businesses reporting little or no effects from COVID-19 increased from 25% in late April to 40% by early June 2020.



Credit: AGI, data derived from the U.S. Census Bureau, Small Business Pulse Survey

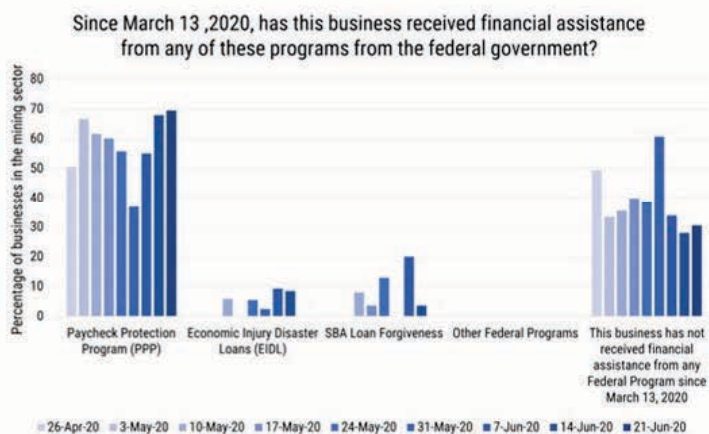


## Financial assistance

The Paycheck Protection Program was the most common source of financial assistance for small businesses in this sector. For the majority of the survey period, between 20% to 30% of small businesses in this sector reported that they had not requested financial assistance from any source since March 13th.



Credit: AGI, data derived from the U.S. Census Bureau, Small Business Pulse Survey

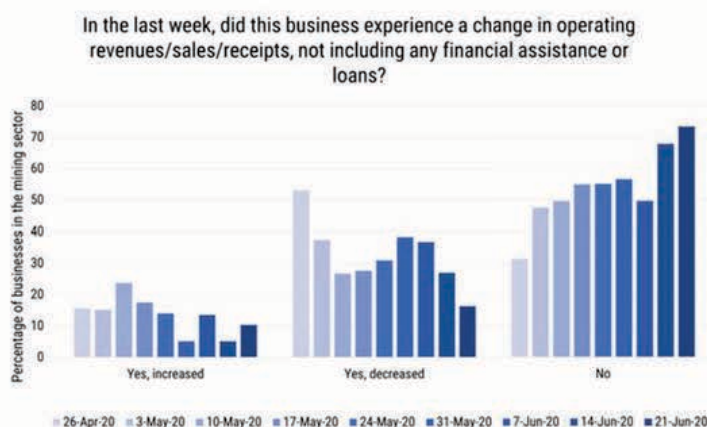


Credit: AGI, data derived from the U.S. Census Bureau, Small Business Pulse Survey

## Financial health

Small businesses in the *mining* sector indicated a lessening of impacts to operating revenues from late April through late June. Whereas just over half of businesses reported declines in operating revenue at the end of April and by the end of June, only 16% of businesses reported the same. Concurrently, the percentage of businesses reporting no change in operating revenues increased from 31% to 73% over the same period. The percentage of businesses with

over \$50,000 in total operating revenue increased from 37% at the end of April to 64% by the end of June. In addition, at the end of April, one third of businesses reported cash on hand in excess of one month, and this percentage increased to 41% by the end of June, with higher percentages (52% to 55%) occurring in mid-May through early June. Furthermore, over 87% of businesses reported that they did not miss any loan payments and over 84% reported not missing any other scheduled payments over this period.



Credit: AGI, data derived from the U.S. Census Bureau, Small Business Pulse Survey

## Business operations

Small businesses in the *mining* sector reported minimal interruptions to business operations during this time. For the majority of the study period, over 80% of businesses reported no temporary closing of locations for at least one day per week, with the exception of mid-May when 72% of businesses reported the same. Impacts to staffing were minimal with approximately three-quarters or more of businesses reporting no declines in staffing or in the number of hours for employees. In addition, over 70% of businesses reported no supply chain disruptions from the end of April through the end of June.

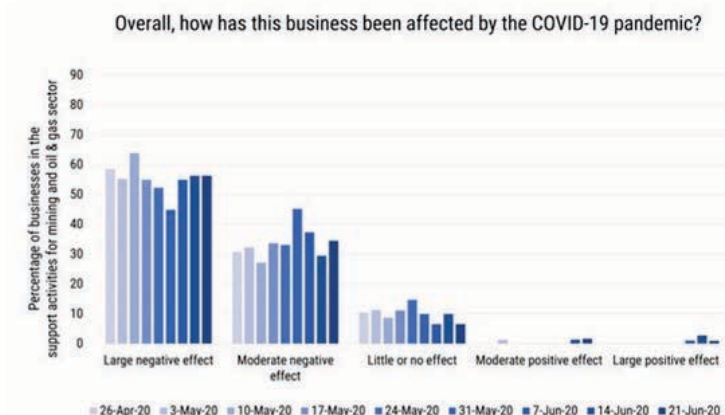
## Small businesses within the support activities for mining and oil and gas sectors

### Overall impacts

For most of late April through late June, over half of small businesses in the *support activities for mining and oil and*



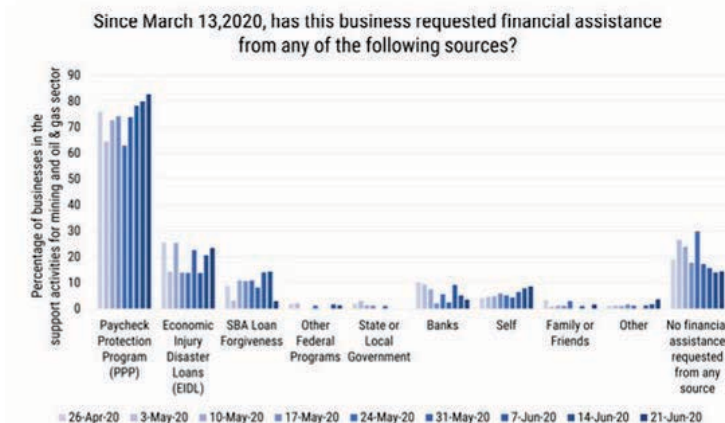
gas sector reported large negative effects from COVID-19, and between 27% and 45% reported moderate negative effects. Between 7% and 15% of businesses reported little or no effect during this period.



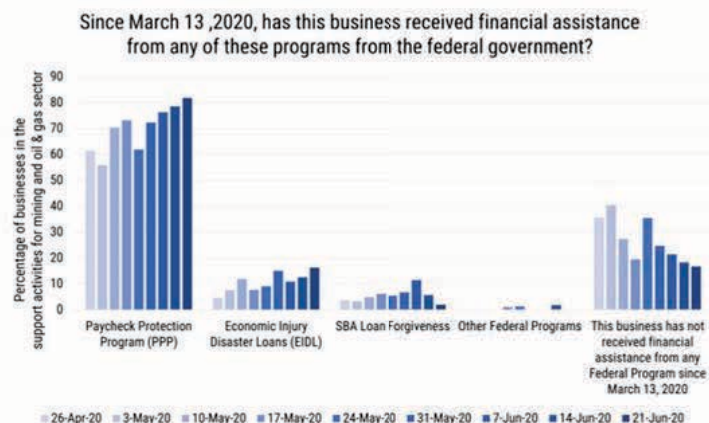
Credit: AGI, data derived from the U.S. Census Bureau, Small Business Pulse Survey

## Financial assistance

The Paycheck Protection Program and Economic Injury Disaster Loans were the most common sources from which financial assistance was requested by businesses in this sector. The percentage of businesses not requesting financial assistance since March 13th peaked at 30% in late May and declined to 15% by the end of June. In addition, the percentage of businesses not receiving assistance from federal programs declined from 36% at the end of April to 17% by the end of June.



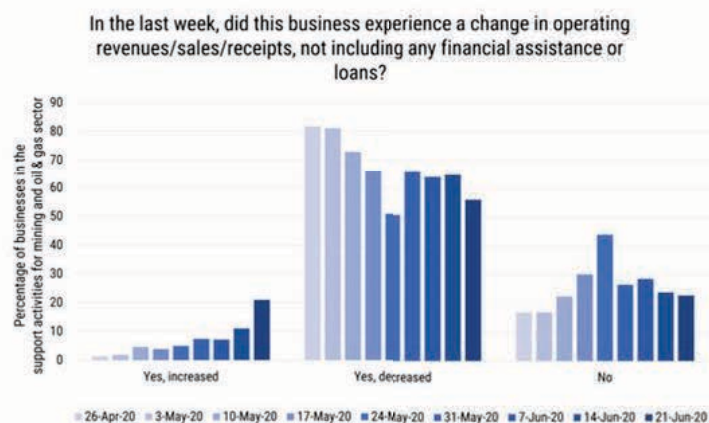
Credit: AGI, data derived from the U.S. Census Bureau, Small Business Pulse Survey



Credit: AGI, data derived from the U.S. Census Bureau, Small Business Pulse Survey

## Financial health

Declines in operating revenues were reported by 82% of businesses in this sector at the end of April 2020 and by 56% of businesses at the end of June. The percentage of businesses reporting \$50,000 or less in monthly operating revenues decreased from 57% in mid-May to 47% by the end of June. Furthermore, the percentage of businesses reporting one month or less in available cash on hand for business operations declined from 41% at the end of April to 29% at the end of June. Over 80% of businesses reported that they did not miss any loan or other scheduled payments during this period.



Credit: AGI, data derived from the U.S. Census Bureau, Small Business Pulse Survey

## Business operations

Interruptions to business operations were minimal in this sector, with the exception of reduced hours for employees. The percentage of businesses temporarily closing locations for at least one day per week declined from 24% at the end of April to 17% at the end of June. Staffing remained



relatively consistent over this period with over three-quarters of businesses reporting no declines in staffing. However, the percentage of businesses reporting reductions in the number of hours worked by employees was 65% at the end of April and 42% by the end of June. In addition, over 72% of businesses reported no supply chain disruptions from late April through the end of June.

We will continue to provide current snapshots on the impacts of COVID-19 on the geoscience enterprise throughout the year. For more information, and to participate in the study, please visit: [www.americangeosciences.org/workforce/covid19](http://www.americangeosciences.org/workforce/covid19)

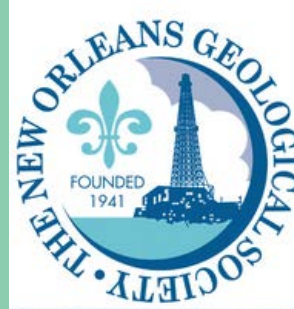
Funding for this project is provided by the National Science Foundation (Award #2029570). The results and interpretation of the survey are the views of the American Geosciences Institute and not those of the National Science Foundation.





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# NOGS 2021 Calendar Sale!

*Looking for a  
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Thank you to all of our members and friends who submitted photos for the calendar! Cover photo winner to be announced in our November NOGS Log issue and will receive a free calendar.

Calendars will go on sale in early November and will be available for purchase from our online NOGS Store.

For more details go to:

[www.nogs.org/NOGS-Store](http://www.nogs.org/NOGS-Store)

If you would like to purchase an advertisement space in the calendar to assist NOGS in covering print costs, please contact Christy Himel: [admin@nogs.org](mailto:admin@nogs.org)

## **Calendar Pricing\***

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# Questionnaire about the uses and value of geologic maps and information derived from geologic maps



Hello. I am inviting you to participate in a national assessment of the economic benefits of geological mapping. This link – <https://www.surveygizmo.com/s3/5772757/e216571551c0> – directs you to an online questionnaire, focusing on your use/potential use of geological maps and associated reports, and the value of that use to your business or activity. It will be used nationally and by individual States to justify their geological mapping and associated societal benefits to Congress, State General Assemblies, and the public.

This assessment is the largest and most comprehensive study of its kind ever conducted for the discipline of geology. It comes at a time when (1) significant improvements to infrastructure have long been touted at the Federal, State, and local levels, and now more than ever are required for optimum economic recovery, (2) the uncertainty of climate change looms large on the horizon with a real threat to that infrastructure and human livelihood in many areas, (3) understanding geologic hazards are increasingly important due to population growth and existing/expanding infrastructure, and (4) mineral (especially critical minerals) and energy resource assessments are crucial for technological advancements and economic diversification/recovery.

Infrastructure includes the fundamental facilities and systems that provide us with the services that we need for a healthy economy. It therefore includes an understanding of our State's and Nation's geology as the "host" of considerable infrastructure development, as well as insight into natural resource and geologic hazard evaluations. However, the ease, efficiency, and costs at which these issues can be addressed, and longer-term resource sustainability, are directly linked to their natural setting. This applies to (1) mineral or water resource development, (2) construction or improvement of new highways, bridges, sidewalks, and foundations, (3) environmental protection, (4) distribution systems for water and sewer, (5) oil and gas pipelines, (6) energy development, and (7) improvements to recreational areas. In all cases, an understanding of the interaction of human activity with both the land surface and the subsurface is essential to minimize potential impacts of natural hazards and maximize resource potential, environmental protection, and associated economic benefits.

I urge you to please fill out the online questionnaire to the best of your ability. The larger the response rate, the more significant are the results, and its eventual outcome for helping to justify this most basic of geologic endeavors. This is also an opportunity for you to tell us of your needs and where you think we should focus activities to best serve you. Please answer as many questions as possible on the survey. If you should receive more than one request to fill out this survey, you only need to do so once. If you cannot fill out the questionnaire in one sitting, a button in the upper right, titled "Save and continue later", asks for your email address, and will send you a message with a link directing you to where you left off. Please complete the online survey by November 2, 2020.

Thank you.

Dick Berg - Director and State Geologist  
Illinois State Geological Survey

[rberg@illinois.edu](mailto:rberg@illinois.edu)



### **George B. Vockroth**

We note the passing on September 2, 2020, of George B. Vockroth in Jackson, MS. Although not a member for a few years, George was employed as a geologist at Chevron and had several assignments in New Orleans and in Jackson. He took early retirement while working in Jackson and opened his own exploration and drilling company Vantage Oil Co. George was 92 years old.