

AMERICAN INSTITUTE OF PROFESSIONAL GEOLOGISTS

Northeast Section **NEWSLETTER** *Holidays 2019*

As published on 12/15/2019.

**Take a look at what the
Section is doing:
September Meeting
Minutes**

AIPG National Meeting

**Vermont Quarry and
AIPG Dinner Cruise
Photos are HERE!**



**NJ LSRPA
Conference**

The Lost Continent

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HOLIDAYS 2019 EDITION No. 158

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(Executive Committee continued on page 7)



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(Executive Committee continued from page 5)

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2020 EXECUTIVE COMMITTEE MEETING SCHEDULE:

January 6th

March 9th

May 15th (Spring Meeting on-site)

July 13th

September 14th

October 9th (Fall Meeting)

December 7th

***Meetings are typically held from
4:00 to 6:00 pm via teleconference.***

(End)

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**Presidential
Ramblings
Holiday 2019**
By Michael Grifasi

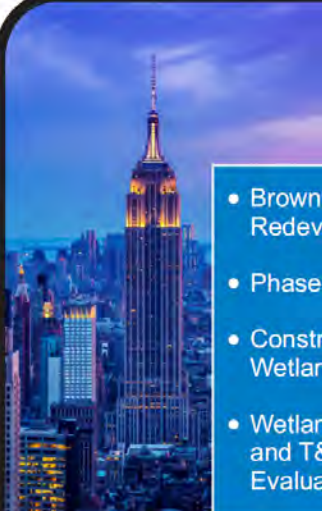


National Conference Finale

Hello Northeast Section! Well, we made it! After several years of conceptualizing, after more than a year of planning, and after a few months of some legitimate hustling, the AIPG National Conference is now behind us. And I feel great! First off, thanks to all from the Northeast Section who devoted their time to help put this event together. Despite National doing most of the heavy lifting, there was still plenty of tasks left over that needed to get done. Thanks also to those from the Northeast Section who attended the meeting. And our friends from the other sections, many thanks for traveling so far to be with us. Finally, to Cathy Duran and Wendy Davidson at National... I don't know how you both do it. My wife plans events on this scale for a living and so I'm quite familiar with all of the moving parts associated with a well-run conference machine so to say this event was seamless does not do justice to how well this event was executed. Well done, Cathy and Wendy! Well done!

Now, I did spend a lot of my time at the hotel running around, checking in on things, and, when needed, helping put out small fires. Therefore, I didn't get to go on any of the field trips that were offered. And I missed the retro arcade tournament because I'm old

(Ramblings continued on page 14)



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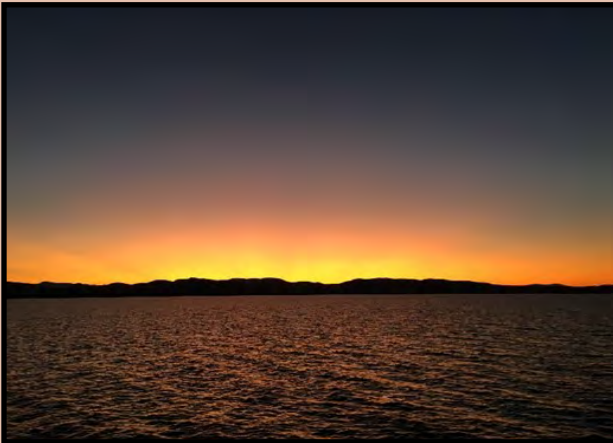
(Ramblings continued from page 11)

and I have a 9:30 pm bedtime. That said, I did make it on the Spirit of Ethan Allen Dinner Cruise, which appeared to be attended by almost every other conference registrant. It was a warm night for the cruise, thankfully, and a near cloudless sky. The food was good, the cocktails were flowing, and people were happy. As the sun set over the Adirondacks, people migrated to the deck to watch the last moments of light disappear over the mountains. I was one of them – timed perfectly during the awards ceremony when my name was called. Needless to say, I owe a special thank you to Northeast ExCom Member-at-Large, Chris Brown, my award ceremony stand-in. Seriously though, look at these photos!



***Top Left:
Geologists
missing the
awards
ceremony
as well.***

***Bottom
Left:
Sunset sans
geologists.***



It was really nice to meet all of the folks from National and the various committees and many of the AIPG members in

attendance. And it was also really nice to drive home with the conference behind me (both literally and figuratively speaking).

Now it's time to look ahead to the coming year, to start planning our next Section meeting, to ramping up for the 2020 Angelo Scholarship season, and, hopefully, to get two really interesting short courses on the calendar.

Stay tuned for what's to come!

(Ramblings continued on page 15)

(Ramblings continued from page 14)

I'm glad this is called a "Rambling". It gives me the space to make a quick transition without any real justification. Like this, for example:

I've spent the last several years being tied to a desk at work, my days as a field geologist seemingly behind me. As a result, when I hit the road last week for a couple of work meetings, I embraced it fully. Six states in five days with extended stays in both Great Falls, MT, and Boise, ID. Driving in to Mountain Home Air Force Base in Idaho, I saw a sign for a nearby state park – Bruneau Dunes. The sun was out, temp was going to hit 60 degrees, and my site visit was going to end at 1:00 pm.

A bit of information about the dunes: the highest single-structured sand dune in the United States (140 m) with sands thought to originate approximately 15,000 years ago during the Bonneville Flood. While some drifting occurs, the dunes are more or less stable. Driving into the park, I saw about a score of very happy elementary school children climbing the tallest dune with sleds in hand. I watched them giggle all the way down as they carved a path in the gray sands. I briefly thought of the winter in Upstate New York but quickly pulled myself out of that downward spiral. In that moment, I remembered how much I love this field and I felt lucky to have the opportunity to work in it. Here are a couple of photos I took at the park.

Until the next newsletter,

Michael



**Top : Air, Land,
Water**

**Bottom : Bird
tracks and a
carabiner..**

(End)



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The American Institute of Professional Geologists NORTHEAST SECTION

American Institute of Professional Geologists - Northeast Section

AIPG National Meeting

The Northeast Section was delighted to welcome nearly 200 participants to Burlington, Vermont for the 56th Annual AIPG National Meeting! The theme this year was *Geology in the Green Mountains: Scenic Beauty and Economic Engine*. Not only does the geology of Vermont contribute to the overall sense of awe our guests experienced as they traveled the state, but it also serves as a resource that has played a significant role in shaping the economy and, ultimately, the culture of Vermont.

The meeting began on Saturday with the National Executive Committee meeting in the morning, followed by the Advisory Board meeting in the afternoon. The afternoon also saw host to the AIPG Student Career Workshop and the student/professional speed networking event that was so popular at last year's meeting. These sessions and activities are a great way for students and young professionals to get to know many of our members in a low-stress setting, which helps them to network throughout the meeting.

We also had five exciting field trips that began on Sunday and continued through Tuesday. A special thank you to field trip leaders Dorothy Richter, Donald Murray, Dr. Jon Kim, Dr. Keith Klepeis, Vermont State Geologist Marjorie Gale, George Springston, Dr. Leslie Kanat, and Lance Mead.

The meeting began on Monday morning with a Plenary Session presentation by Jon Kim (VTGS) and Keith Klepeis (UVM). They spoke about the interplay between the complex structural geology of Vermont and the associated issues surrounding emerging groundwater contaminants. Their informative talk outlined many of the issues faced in the environmental field as we contend with persistent and pervasive contaminants in our drinking water.

On Monday evening, approximately 110 people boarded the Spirit of Ethan Allen for a sunset cocktail cruise and awards banquet. The views were spectacular, with free reign to wander the decks and socialize in groups. Section Leadership awards went to Robert Campbell (CA), Jeff Frederick (NE), Jeff Groncki (IL/IN), and Keith Rapp (MN). Presidential Certificates of Merit Awards were also presented to seven individuals, including our own Ray Talkington. Additionally, the NE Section's meeting planning committee was also honored for their efforts in pulling this meeting together: Michael Grifasi, Jeff Frederick, Bob Blauvelt, Dennis McGrath, Jean Patota, and Luanne Whitbeck. Many thanks to everyone who helped make this meeting such a tremendous success!

(Meeting Announcement continued on page 18)

(Meeting Announcement continued from page 17)

2019 AIPG Student Poster Contest Winners

Undergraduate Winners

- 1st Place - \$500 - Juliana Flint, SUNY Plattsburgh, Plattsburgh, NY - Predicting Nitrogen Removal in Agricultural Wetland Buffers Using Traits of the Plant Community.
- 2nd Place - \$200 - Monike Distefano, Metropolitan State University of Denver, Denver, CO - The Role of Crystal and Soil Geochemistry for the Formation of Ore Deposits.
- 3rd Place - \$100 - Kevin Hatton, Stony Brook University, Stony Brook, NY - Uranium-Lead Dating of Petrified Wood in the Turkana Basin.

Graduate Winners

- 1st Place - \$600 - Israel Olaoye, Kent State University, Kent, OH - Assessing Land Use/Land Cover (LULC) Change and Climate Change Vulnerability Using Machine Learning, Markov Chain Model Meeting Summary and GIS: A Case Study on Old Woman Creek (OWC) Watershed, OH.
- 2nd Place - \$250 - Hasan Al-Saedi, Missouri University of Science and Technology, Rolla, MO - Smart Water-CO₂ Flooding in Low-Permeable Bartlesville Sandstone Cores Bearing Heavy Oil: Experimental and Simulation Study.

(Meeting Announcement continued on page 44)



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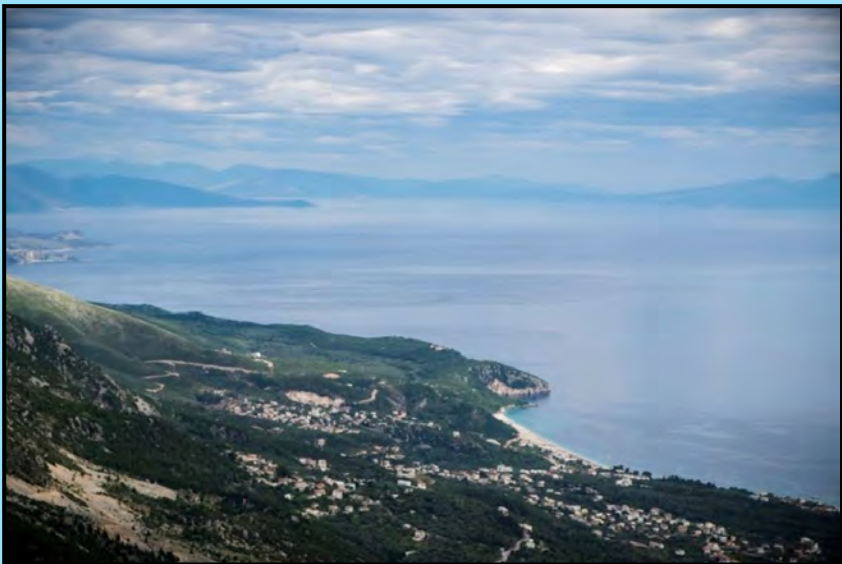
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Researchers Discover What Became of a Lost Continent, Now Hidden Under the Adriatic Sea

BY MADELEINE CARLISLE FOR TIME MAGAZINE
madleine.carlisle@time.com. SEPTEMBER 25, 2019

Researchers with Utrecht University in the Netherlands have uncovered what became of a lost continent that broke off from Africa and wedged itself under Europe, creating mountain ranges that span across 30 different countries from Spain to Iran.

“What we have studied is the very complex history of the geology of the Mediterranean region,” Utrecht professor Douwe van Hinsbergen, the lead researcher on the project, tells TIME. Researchers had already known for decades that a continent created the mountain ranges of Europe and the Middle East. “What that continent might have looked like, however, was until now estimated with rather schematic cartoons,” van Hinsbergen says in an email.



Albania, Adriatic coast between Vlore and Sarande.
AGF—Universal Images Group via Getty

(Hidden Under the Adriatic Sea continued on page 21)

(Hidden Under the Adriatic Sea continued from page 20)

With the help of modern software, a clearer picture of that hidden continent emerged.

“What we have done is use very elegant and useful and free plate reconstruction software, called ‘GPlates’ to systematically piece together what that continent looked like... how many there were... and how [it] broke away from Africa,” van Hinsbergen writes. The project was originally scheduled to take three years, but ended up taking 10.

They found that over 200 million years ago, shifting continental plates caused a continent—which the researchers named Greater Adria—to break off from Northern Africa. This created a deep ocean, the last remains of which are the Ionian sea and the Eastern Mediterranean sea between Libya and Turkey.



Reconstruction of the lost continent Greater Adria (140 million years ago)- mountain range formation and plate tectonics in the Mediterranean region integrally studied for the first time.

<http://ow.ly/5VjX50vTomc> @UUEarthSciences

(Hidden Under the Adriatic Sea continued on page 25)

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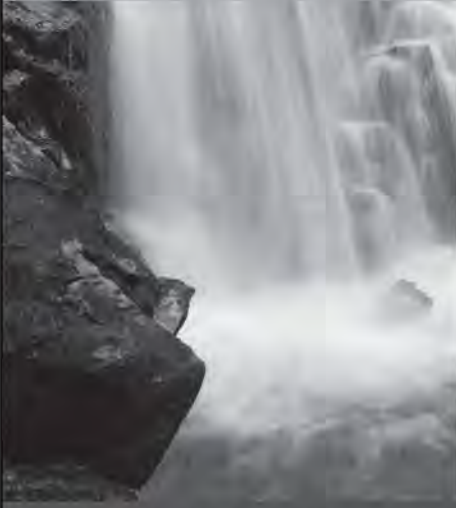
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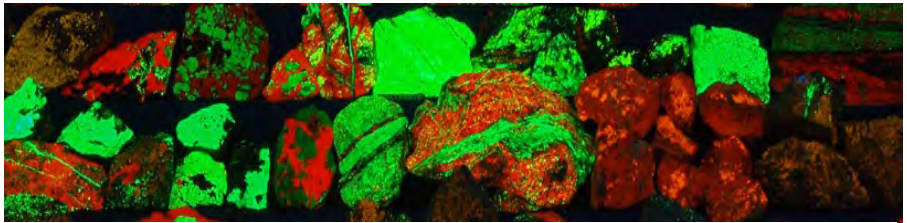
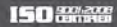


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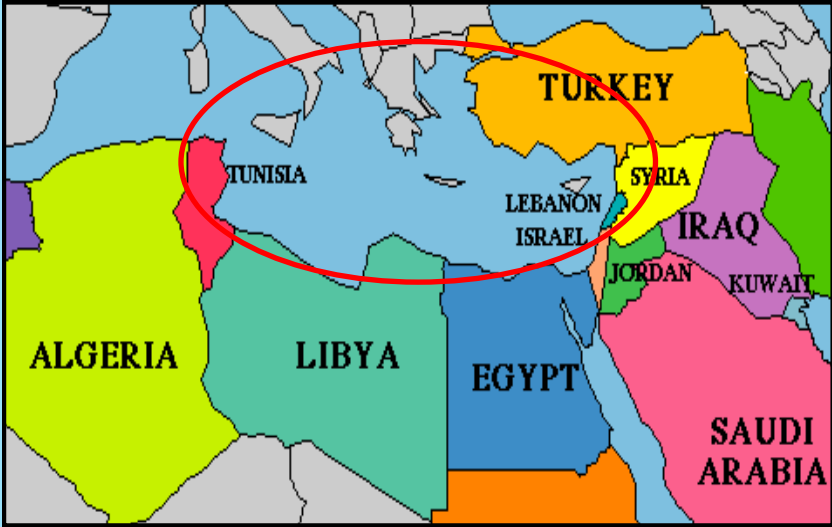
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(Hidden Under the Adriatic Sea continued from page 21)

If you look at a map of modern day Africa, van Hinsbergen points out, you can see a “bite” from where the continent broke off, running from Tunisia to Israel.



Greater Adria was then pushed under southern Europe, creating the mountains the region is known for today, such as the Apennine Mountains of Italy, the Dolomites of Italy, the Balkan mountains of Slovenia, Croatia, Serbia, Bosnia and Herzegovina, Montenegro, Northern Macedonia, Kosovo, and Albania. It also created Greece and much of Turkey.

“Suppose you have a sweater on with thick sleeves on your arms,” he explains. “And you try to shove your arm below the table... what you will see is your sleeves will crumple up while your arm is going under. That sleeve is the Apennines. That sleeve is Greece. That sleeve is Turkey.”

The last intact remains of the continent lie under the Adriatic Sea. He adds that while Greater Adria was “by far” the biggest continent, there were more, smaller continents that broke away from Africa and were consumed under Europe.

(Hidden Under the Adriatic Sea continued on page 40)



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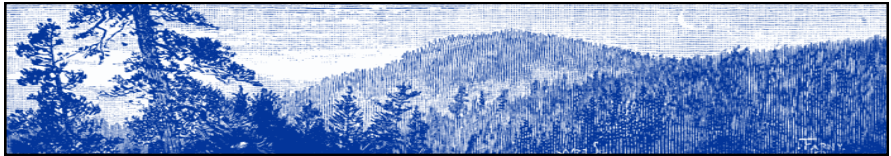
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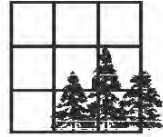
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Trends across disciplines

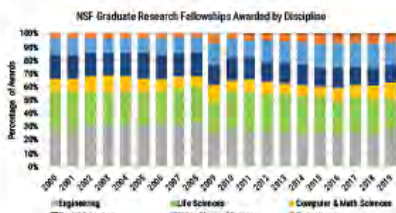
NSF graduate research fellowship awards in the geosciences have consistently comprised less than 10% of all fellowship awards. The American Recovery and Reinvestment Act of 2009 boosted the overall number of graduate research fellowships across all disciplines and since 2010, just over 2,000 fellowships have been awarded per year. The bulk of graduate research fellowships have consistently been awarded in engineering and life sciences research.

Bioengineering and biomedical engineering, chemical engineering and mechanical engineering have comprised 47% to 57% of graduate research fellowships awarded to those pursuing engineering degrees. Within the life sciences, approximately one-fifth of fellowships have been awarded to those pursuing ecological research and an increasing percentage of fellowships (11% in 2000 to 14% in 2019) have been awarded to those pursuing neuroscience research.

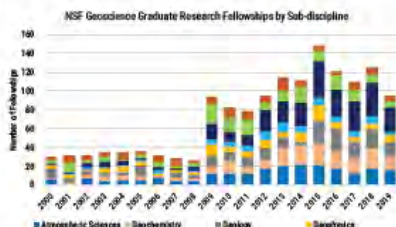
Trends within the geosciences

As with other disciplines, the American Recovery Act of 2009 boosted the overall number of graduate research fellowships awarded in the geosciences. Between 2000 and 2008, 26 to 36 fellowships were awarded each year and after 2008, between 78 and 148 were awarded annually.

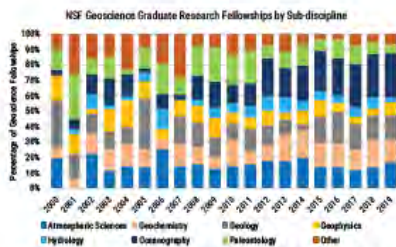
Within the geosciences, the percentage of awards to fellows pursuing research in atmospheric science, geology and geochemistry have remained relatively steady since 2000. The percentage of awards to fellows pursuing research in paleontology declined from 22% in 2011 to 6% in 2019, as well as in geophysics from 13% in 2009 to 8% in 2019. Total awards to fellows pursuing research in oceanography increased from 17% in 2009 to 28% in 2019.



*NSF Education and Learning Research
Source: AGI Geoscience Workforce Program; data derived from NSF's Graduate Research Fellowship Award Database



Source: AGI Geoscience Workforce Program; data derived from NSF's Graduate Research Fellowship Award Database



Source: AGI Geoscience Workforce Program; data derived from NSF's Graduate Research Fellowship Award Database

Federal Research Funding of the Geosciences (1970-2017)

In 2016, 6.6% of the \$66.7 billion in total federal research funding was allocated to geoscience research. Historically, the percentage of total federal research funding applied to the geosciences declined from 10% in 1970 to an all time low of 5% in 2010, and rebounded to 6.9% in 2014 and 2015. The rebound was driven by an increase in funding for basic research, primarily within the atmospheric sciences and interdisciplinary geosciences. During this time period, there was a decline in the percentage of basic research funding applied to the life sciences, most notably for medical sciences which decreased from 20% in 2008 to 17% in 2015, and in the biological sciences which declined from 30% in 2010 to 25% in 2016. Preliminary data on total 2017 federal research funding indicates that the percentage of total federal research funding applied to the geosciences was expected to decline from 6.6% in 2016 to 6.2% in 2017.

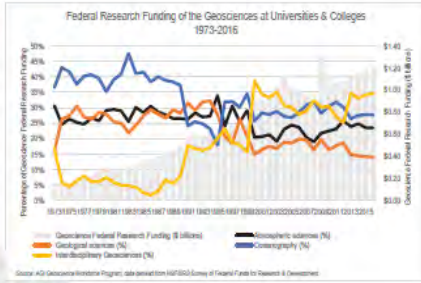
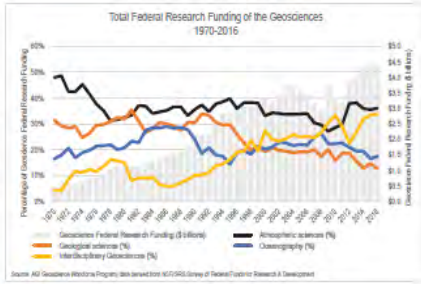
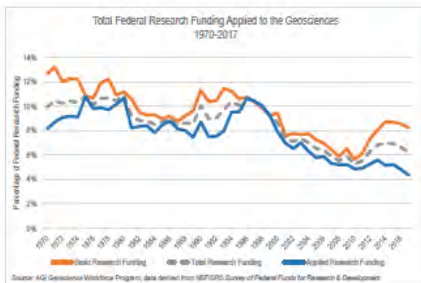
Within the geosciences, research funding has primarily supported atmospheric science research which received 36% of the \$4.4 billion in total federal geoscience research funding in 2016; however, an increasing percentage of funding has been applied to interdisciplinary geoscience research since the mid-1980's. In 2016, interdisciplinary geoscience research received 34% of total federal geoscience research funding, while the geological sciences declined from 34% in 1991 to 13% in 2016, and oceanography declined from 23% in 2011 to 17% in 2016.

Federal geoscience research funding at universities and colleges is primarily applied to interdisciplinary geoscience research, which received 35% of the \$1.1 billion in total federal geoscience research funding in 2016. Oceanographic research which suffered a precipitous decline in the percentage of funding between 1990 and 1995, rebounded in 1996, and in 2016 received 28% of federal geoscience research funding at universities and colleges. Similar to the trends in total federal research funding, the percentage of research funding applied to the geological sciences at universities and colleges declined from 32% in 1994 to 14% in 2016.

Read more in the 2018 Status of the Geosciences Report available at:

<https://store.americangeosciences.org/status-of-the-geoscience-workforce-report-2018-digital-version.html>

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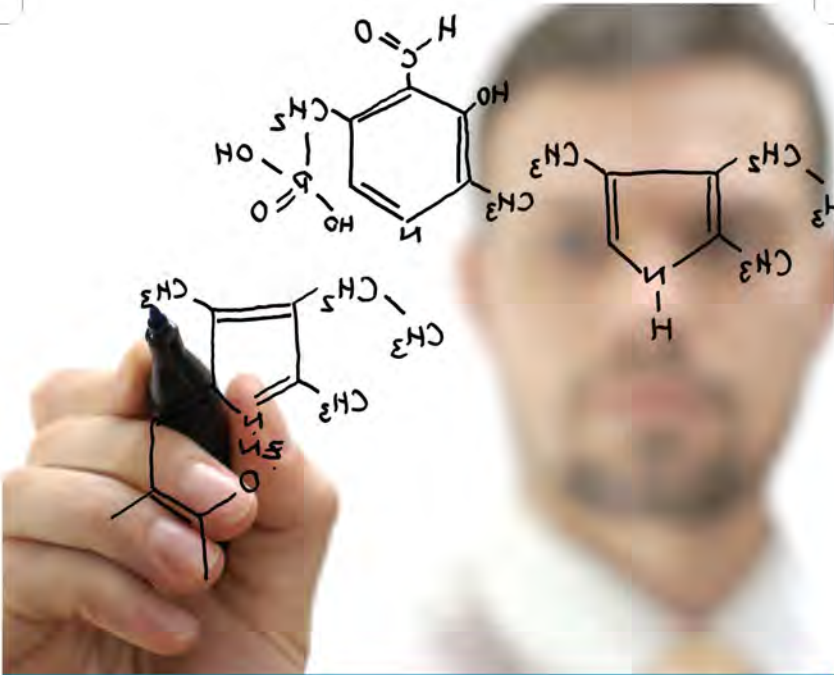
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(Hidden Under the Adriatic Sea continued from page 25)

How did researchers figure this out? Using the software GPLates, they analyzed data that, as van Hinsbergen put it, revealed “motions between rock units,” piecing together the history of Greater Adria like a puzzle. They looked at magnetic stripes on the ocean floor, fault motions and magnetic fields stored within rocks themselves. All their data was collected from published literature — around 1,500 papers from scholars in 30 countries — some of which van Hinsbergen and his co-authors had contributed to. The full methodology appears in their published paper.

“The reason why we gave this [continent] a new name, is that these mountains belts, which run from Spain to Iran, cover about 30 different countries... and almost every country had their own names and their own assumptions for what [they] looked like in the past,” van Hinsbergen says.

When explaining his choice of name, van Hinsbergen writes, “I used nomenclature from the Himalaya: the rocks of the Himalaya were also derived from continental crust, but then of the Indian plate. The region from which these rocks derive is known as ‘Greater India’ in the literature, so I exported that addition and called it Greater Adria.”

Van Hinsbergen explains that much of the building materials that are widespread in Italy, Greece and Turkey come from the mountains created by Greater Adria. Marble for example, comes from buried carbon rock that have undergone heat and pressure.

“The marbles that were used by the Romans to make their temples, that is a relic of Greater Adria,” he explains.

When TIME asked him if there’s anything readers should know about his project, he added: “It’s a lot of fun.”

(End)

Field Trip

Jessica McEachern shares information from the National Meeting field trip to the operating mines/quarries of Vermont.

The “Operating Mines/Quarries in the Vermont Valley” field trip led by Lance Mead took place on September 15th. Participants were given some background on the history of the mining industry in the area as they traveled down the “marble belt” of the Champlain Valley to the Vermont Valley. The trip included stops at several quarries including the Middlebury Quarry (top photo) and Hogback Quarry (bottom photo), as well as the Vermont Marble Museum in Proctor. This trip was a rewarding experience that gave an eye-opening look at Vermont’s “Economic Engine.”



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(Meeting Announcement continued from page 18)

Frank Ettensohn was awarded the Ben. H. Parker Memorial Distinguished Service Medal, and David Abbott, Jr. was awarded the John T. Galley Sr. Memorial Public Service Award. But the highlight of the evening was seeing Sam Gowan (NE) receive the Martin Van Couvering Memorial Service to the Institute Award! A wonderful summary of Sam's service and life is found below:

Sam grew up on a dairy farm in New York where he was free to explore the land on his own, even before entering elementary school. Geology was a natural fit in high school and college when words and symbols were attached to his observations. Sam's early desire was to be a field geologist in mineral exploration. He was fortunate to get his dream job after graduating from Colby College in Waterville, Maine in 1976; he started working in coal/lignite exploration throughout the US Gulf Coast. This was a great experience for Sam, but not so much for his new wife. While he was working on a lignite prospect in Texas, Karen picked up an application at Texas A&M and suggested he apply.

Sam studied in the Engineering Geology Center at A&M where he completed an MS in 1981 and PhD in 1985. After graduating, he worked as a hydrogeologist for Dunn Geoscience until 1992 when he joined another colleague to start Alpha Geoscience, where he has been the president since 1998. Sam is also the president of Salt Water Solutions LLC and serves on the Board of Directors for two other companies that specialize in the treatment of wastewater generated from natural gas production and leachate from caverns used for hydrocarbon storage.

Sam has spent four decades focusing on environmental damage claims, environmental impacts from mining, and a variety of other geologic endeavors. He is currently a licensed/registered professional geologist in Illinois, Kansas, Missouri, New York, Pennsylvania, and Texas. His work has included many challenging projects, including: testifying in Federal Court about the history of disposal in Love Canal; providing opinions on hydrogeologic investigations to develop gas storage caverns near Sydney, Australia; developing strategies to control leaks in salt mines throughout the U.S., and assessing geotechnical effects from a NYC water supply tunnel under the Hudson River.

Sam became a CPG in 1987 and has remained active in AIPG and in the enhancement of the profession as a whole. He is a National Past President of AIPG, has served on National committees, and currently is Vice-Chairperson of the Foundation of AIPG. Sam served on the NE Section Executive Committee for several years and continues to serve on the NE Section Angelo Tagliacozzo Memorial Geological Scholarship Committee. His involvement with AIPG lead to other activities supporting the development of the profession, such as serving on the Board and as President of the New York State Council of Professional Geologists, which obtained licensed professional status in New York through the efforts of many geologists. He and three colleagues formed a local professional society (Hudson Mohawk Professional Geologists Association (HMPGA), which has been providing monthly speakers and a forum for geologists for 25 years.

(Meeting Announcement continued on page 45)

(Meeting Announcement continued from page 44)

Sam enjoys interacting with his colleagues at AIPG, and at large. Two of his sons are also AIPG members who work at Alpha; one son is also the current president of HMPGA. His third son "would rather be fishing than doing that geology thing." Sam's wife and perpetual supporter (but not when investigating collapsing mines) has "retired" from Alpha to chase after seven granddaughters.

On behalf of the Northeast Section, we would like to thank everyone who worked tirelessly to put this meeting together, everyone who attended, and every member of the Section for supporting Section activities with your dues. We would also like to thank everyone at AIPG National, especially Cathy Duran and Wendy Davidson who not only ran a great meeting, but coordinated travel, lodging, and abstract solicitation (amongst other things) while keeping all of us at the Northeast Section organized and on schedule. Lastly, we want to thank everyone who presented posters, technical talks (or both), or provided content to the student/young professional sessions at the meeting. It is through these individual contributions that this meeting made the entire organization proud.

Finally, the NE Section Leadership would like to reach out to some of the places, like Vermont, where we have members who would be willing to attend meetings and get involved. Please reach out to us and help us shape the future of our profession!

Sincerely,

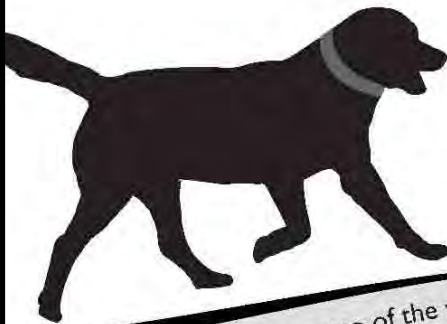
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(End)



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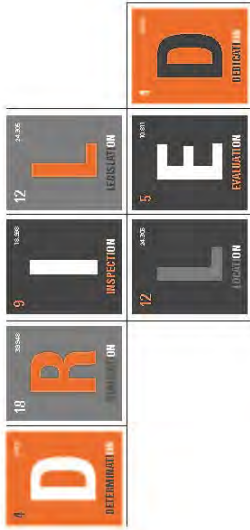
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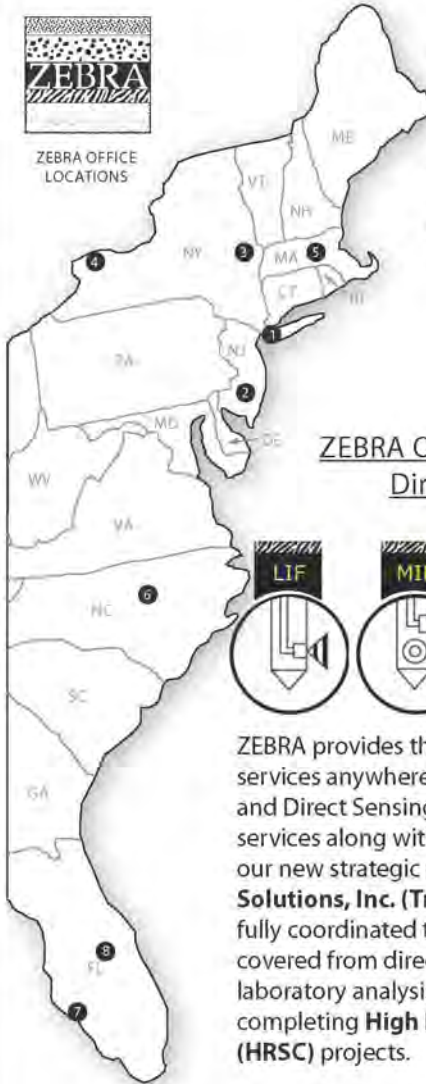
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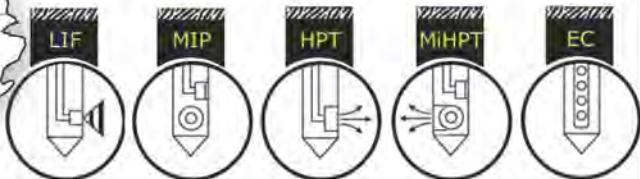
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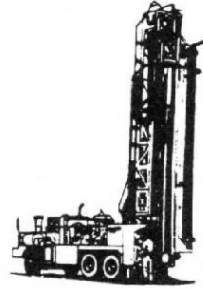
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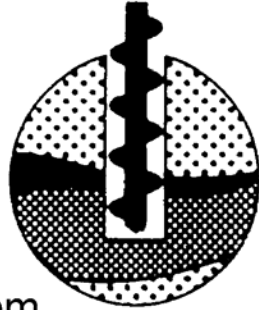
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Thank You Messages from Scholarship Recipients

I'd like to thank the Angelo Tagliacozzo Memorial Scholarship Committee, and the NE-AIPG for selecting me as one of the recipients of the Angelo Tagliacozzo Memorial Scholarship. As an immigrant, the eldest of three brothers, and a first-generation college student, there are many burdens I will continue to face, such as navigating my way through life in this rapidly evolving world and confronting financial barriers that'll appear throughout this journey. However, this award will certainly be of great support as I continue my education in the geosciences. Again, I thank you all so much!

~Hong Cai

Boston College

I am writing this letter to thank you for your awarding me the Angelo Tagliacozzo Memorial Geological Scholarship. Your generosity helped me ensure my hard work will benefit me in my future. I am an immigrant and I came to this (country) with an incomplete degree in Geotechnical Engineering. I never believed I could graduate college and find a job in the profession I love. Now I am a graduating student who was hired by an environmental firm to perform geological studies. I sacrificed a lot in order to graduate. I have two children with whom I couldn't spend much time because I had to study and I also worked at a restaurant at night to support my family and study during any free time I had. I am proud to be a geologist with the award from the Northeast Section of the American Institute of Professional Geologists.

~Ewa Poncyliusz

Brooklyn College

I wanted to write a formal thank you for the NEAIPG Angelo Tagliacozzo Memorial Geological Scholarship for the 2018-2019 year. I am thankful for this wonderful opportunity and all the opportunities that will now be available. Thank you again.

~Megan Heins

SUNY Potsdam

(Thank You Messages continued on page 55)

(Thank You Messages continued from page 54)

I am beyond thankful for being one of the Angelo Tagliacozzo Memorial Geological Scholarship recipients for the 2018-2019 academic year. The \$4,000 helped me pay for my Spring 2019 semester. Without it, I would not have been able to register for courses. Thank you!

~Samantha McComb

SUNY Potsdam

I'm writing to express my sincere gratitude to the Scholarship Committee for making the Angelo Tagliacozzo Memorial Geological Scholarship possible. I was thrilled to learn of my selection for this honor and I am deeply appreciative of your support. I'm currently majoring in Geoscience Engineering with hopes of becoming a Petroleum-Engineer. The financial assistance you have provided will be of great help to me in paying for my educational expenses and it will allow me to take my Fundamental of Engineering exam this Fall. I promise to work extremely hard to pass the FE exam and eventually give a donation to your scholarship fund so I can give future geologists/engineers a chance to complete their dreams.

~Brittany Washington

Rutgers University – Newark

I just wanted to say thank you again for the AIPG scholarship I received this past spring. I want you to know these scholarship opportunities are more than financial help, they're mentally encouraging as well. I feel more determined to continue into the field and do well in my classes when I know someone is expecting me to. I want to make sure I continue to deserve the scholarship. I am putting the funds towards the field camp, as I will be heading out to Death Valley, California on December 27th with the South Dakota School of Mines and Technology.

~Serena Celestino

Rutgers University – New Brunswick



(End)



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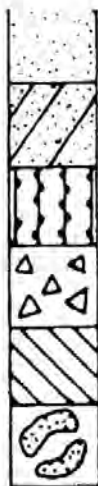
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U.S. Rig Count Continues its Decline

By Valerie Jones
Rigzone Staff
Valerie.Jones@Rigzone.com

November 8, 2019

The U.S. dropped seven oil rigs this week, while the number of gas rigs remained flat, according to weekly data from Baker Hughes Company.

This marks the nation's fourth consecutive week for rig declines and brings the total number of active rigs to 817. This is down 264 from the count of 1,081 one year ago.

Monthly data released Thursday from Baker Hughes shows the U.S.' average rig count in October 2019 was 848, down 30 from September and down 214 from October 2018 (see article on page 67).

New Mexico led all states in rig declines this week, posting a loss of four rigs. Texas idled three rigs while North Dakota idled one rig. Alaska and California added one rig a piece.

Among the major basins, the Permian suffered the most losses at four rigs. The Permian now has 412 active rigs, accounting for more than half of the nation's total.

The Eagle Ford shed three rigs this week while the Williston dropped one rig. The Cana Woodford added one rig.



(U.S. Rig Count continued on page 70)

SEPTEMBER 2019 MEETING MINUTES

NE SECTION – AIPG EXECUTIVE COMMITTEE MEETING SATURDAY, SEPTEMBER 14, 2019

Distribution:

Jessica McEachern	Michael Grifasi	Bob Blauvelt
Jeff Frederick	Kelly Weyer	Luanne Whitbeck
Laurie Scheuing	Chris Brown	Brandon Tufano
Dennis McGrath	Jennifer Rhee	Adelina Prentice
	Dick Young	

Call to Order (4:43 PM)

Secretary's Report: May 2019 ExCom Minutes (Unresolved):

Prepared by Jennifer Rhee. A motion was made and seconded to approve the May 2019 minutes as circulated. All in favor; no opposed. **July 2019 ExCom Minutes:** Prepared by Adelina Prentice. A motion was made and seconded to approve the July 2019 minutes as circulated. All in favor; no opposed.

Treasurer's Report July & August 2019: Reports have been distributed with no comments from any members present.

Correspondence:

Student Chapter Updates:

- *Brooklyn College, SUNY Geneseo, SUNY Binghamton, etc.:* No current updates from student chapters. A discussion ensued on losing touch from year to year with student chapters as students move up and on, the little continuity with professors and with keeping in touch, and on the role of AIPG for student chapters. Future considerations for AIPG student chapter roles could include assisting in preparation for PG licensure and outreach to colleges for accreditation to offer the licensure exam.

New Business

- *2019 Annual Meeting, Burlington, VT – Updates:* Registration seems good and appears to be roughly 180 full registrants.
- *Short Courses—Geophysics & Drone Technology:* The short courses have been moved away from the National Conference.

(September Minutes continued on page 74)



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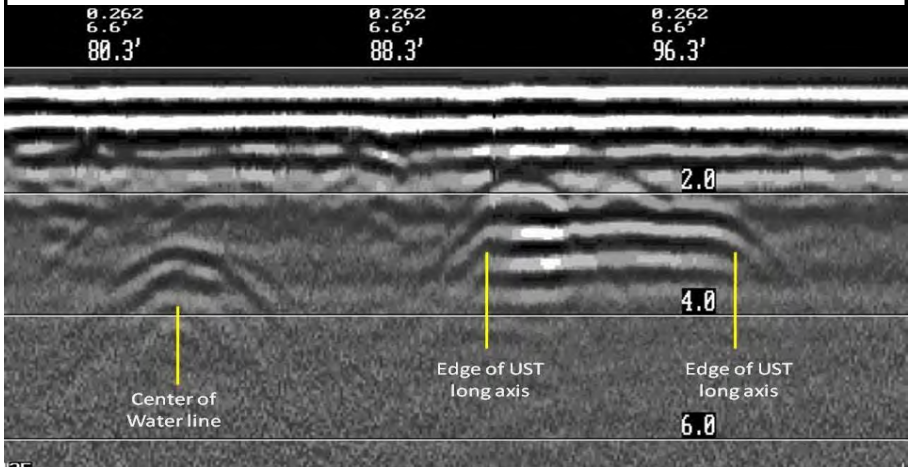
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Looking for Material for the Northeast Section Newsletter— We want you!



From the Editor

There is plenty of room for growth in the Newsletter, and the digital/internet versions offer many opportunities to add value to your organization.

Thus, if you are interested, email Editor Brandon Tufano at btufano@rouxinc.com or Dick Young at ryoungnj@aol.com.



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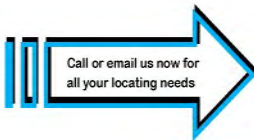
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Baker Hughes Announces October 2019 Rig Counts

November 7, 2019

HOUSTON & LONDON--(BUSINESS WIRE)--Nov. 7, 2019-- Baker Hughes (NYSE: BKR) announced today that the Baker Hughes international rig count for October 2019 was 1,130, down 1 from the 1,131 counted in September 2019, and up 113 from the 1,017 counted in October 2018.

The international offshore rig count for October 2019 was 242, unchanged from September 2019, and up 35 from the 207 counted in October 2018.

The average U.S. rig count for October 2019 was 848, down 30 from the 878 counted in October 2019, and down 214 from the 1,062 counted in October 2018. The average Canadian rig count for October 2019 was 145, up 13 from the 132 counted in September 2019, and down 47 from the 192 counted in October 2018.

The worldwide rig count for October 2019 was 2,123, down 18 from the 2,141 counted in September 2019, and down 148 from the 2,271 counted in October 2018.

About the Baker Hughes Rig Counts

The Baker Hughes rig counts are counts of the number of drilling rigs actively exploring for or developing oil or natural gas in the U.S., Canada and international markets. The Company has issued the rig counts as a service to the petroleum industry since 1944, when Hughes Tool Company began weekly counts of the U.S. and Canadian drilling activity. The monthly international rig count was initiated in 1975.

The North American rig count is scheduled to be released at noon Central Time on the last working day of each week. The international rig count is scheduled to be released on the fifth working day of the month at 5:00 a.m. Central Time. Additional detailed information on the Baker Hughes rig counts is available on our website: bakerhughes.com

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Source: Baker Hughes Company

(U.S. Rig Count continued on page 71)

(U.S. Rig Count continued from page 70)



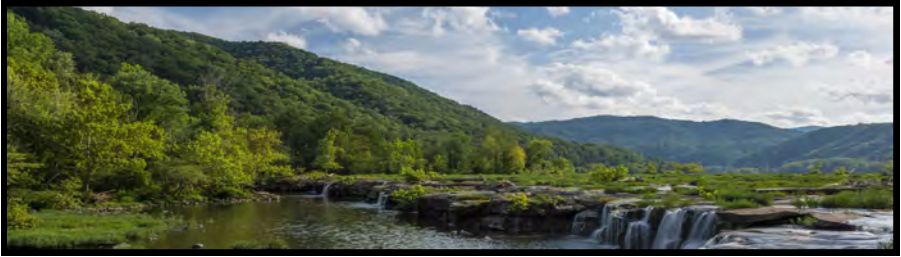
October 2019 Rig Counts

	October		2019		September		2019		October		2018					
	Land		Offshore		Total		Month		Variance		Land		Offshore		Total	
Latin America	159	30	189	0	158	31	189	168	25	193						
Europe	133	42	175	-1	134	42	176	56	36	92						
Africa	93	23	116	1	94	21	115	88	19	107						
Middle East	368	56	424	-1	370	55	425	356	48	404						
Asia Pacific	135	91	226	0	133	93	226	142	79	221						
International	888	242	1,130	-1	889	242	1,131	810	207	1,017						
United States	825	23	848	-30	852	26	878	1,041	21	1,062						
Canada	143	2	145	13	131	1	132	190	2	192						
North America	968	25	993	-17	983	27	1,010	1,231	23	1,254						
Worldwide	1,856	267	2,123	-18	1,872	269	2,141	2,041	230	2,271						

Note to editor: As of June 07, 2019, Ukraine was added to the Baker Hughes International Rig Count report and is reflected in the Europe count. This addition is not reflected in historical data.

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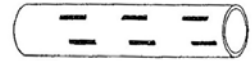
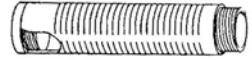
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(September Minutes continued from page 61)

New Business (cont.)

- *Short Courses—Geophysics & Drone Technology (cont.):* An email was sent to the instructors and they seemed pleased with the changes. The short courses are currently planned for the spring/early summer 2020.
- *2020 ExCom Elections—Positions Available:* There will be 3 positions available and the hope is the current members will be available for another term. A discussion followed about adding a Young Professional member; it was decided to wait until we have a YP interested before changing the by-laws.
- *Publications:* No new updates on the Newsletter or the Advertising Sales Update & Income.

Adjournment: 5:27 PM

(End)

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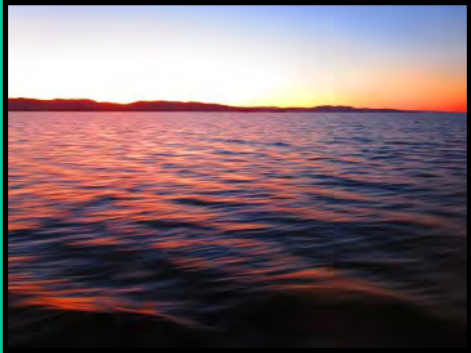
(Field Trip Photos continued on page 77)

*(Field Trip Photos
continued from
page 76)*

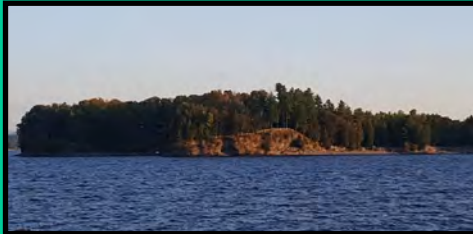


(Field Trip Photos continued on page 80)

AIPG DINNER CRUISE



(Dinner Cruise & Awards Photos continued on page 79)





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HOW GEOLOGICAL MAPS MADE THE APOLLO MOON LANDINGS WORTHWHILE

By David Rothery, Professor of Planetary Geosciences,
The Open University

THE CONVERSATION

I still remember a cartoon in a newspaper in July 1969, just before the first Apollo moon landing. It showed the ground crew reminding the astronauts as they boarded their rocket, “Don’t forget to bring back some rock!” This was a nod to an old holiday cliché – people who went to the seaside were often asked to bring back some “rock”, referring to rock candy. It wasn’t very funny, but it does demonstrate that, once the race against the Soviets was won, the point of it all was to find out about the moon’s geology.

The scientific value of landing on the moon would have been diminished without studies to establish the context of the landing sites. The primary consideration was to touch down somewhere safe, but rocks collected from these places would have conveyed much less information had effort not gone into working out the nature of, and more importantly the relationships between, the rock units from which the samples were collected.

This was done by making detailed geological maps, using the same principles that geologists use on Earth.

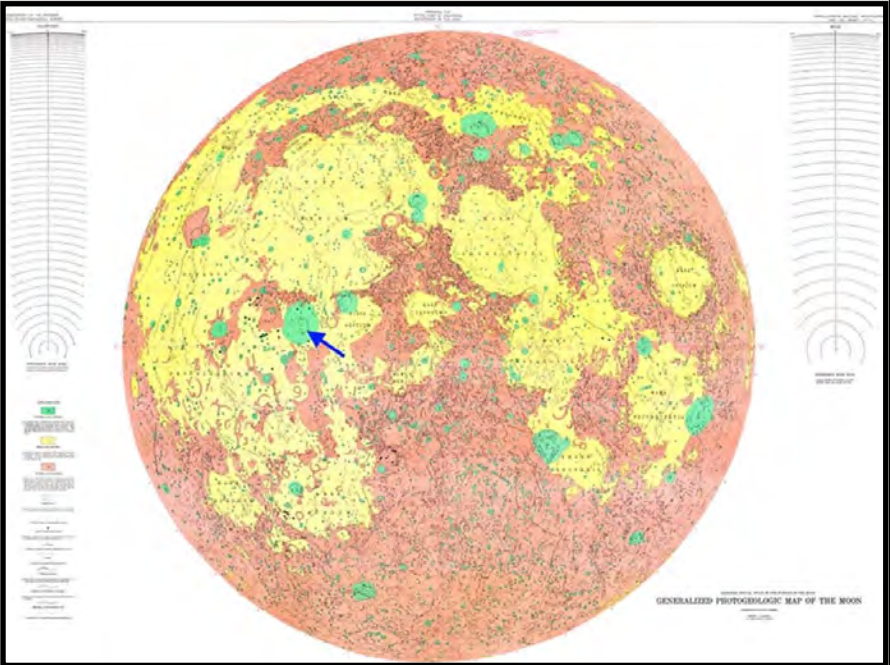
Cartography vs. Geological Mapping

Telescopic observers had already begun to draw general maps of the moon’s near side (which is all that can be seen from Earth) in the 1600s. These were essentially exercises in cartography, documenting what the moon looks like. Soon names were being marked to label individual features, but this was just a convenient way to identify them. It wasn’t based on any actual understanding.

By contrast, geologists make maps to gain insight into the history of a region. They distinguish tracts of terrain of which the ages – and therefore possibly origin and composition – can be deduced to be different. This is usually achieved by working out what is on top of what (younger layers will generally be on top of older layers) and cross-cutting relationships (younger features can cut across older ones, but not vice versa).

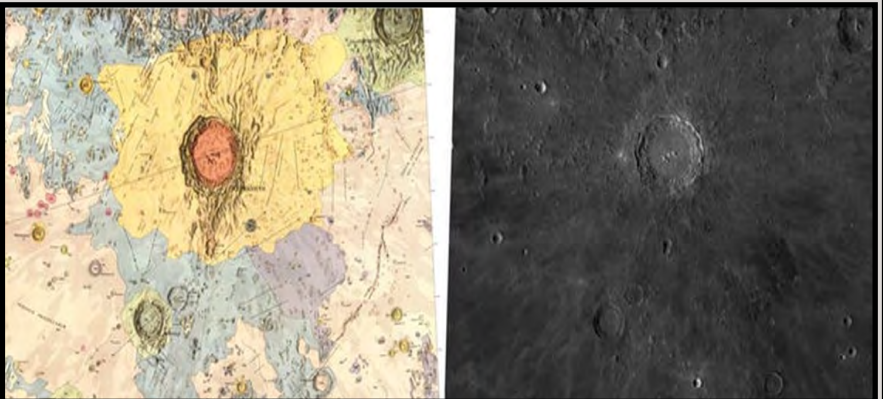
The first published attempt to use these principles on the moon was a 1960 study by geologists Robert J. Hackman and Arnold C. Mason. It was based entirely on telescopic observations, and showed the dark patches – the “maria” – lumped together as all of the same age in yellow, overlying “pre-maria” terrain, thought to be older, in brown. The youngest unit was called “post-maria rocks”, shown in green, which was interpreted to be craters and ejecta from them that were formed after the maria.

(Geo Maps... Moon Landings continued on page 81)



Above: Hackman and Mason's map of the moon. Arrow locates Copernicus crater. USGS

Below: Left (USGS): Shoemaker's prototype Copernicus geologic map. Right (LROC): The same area, on the same map projection, based on Lunar Reconnaissance Orbiter images.



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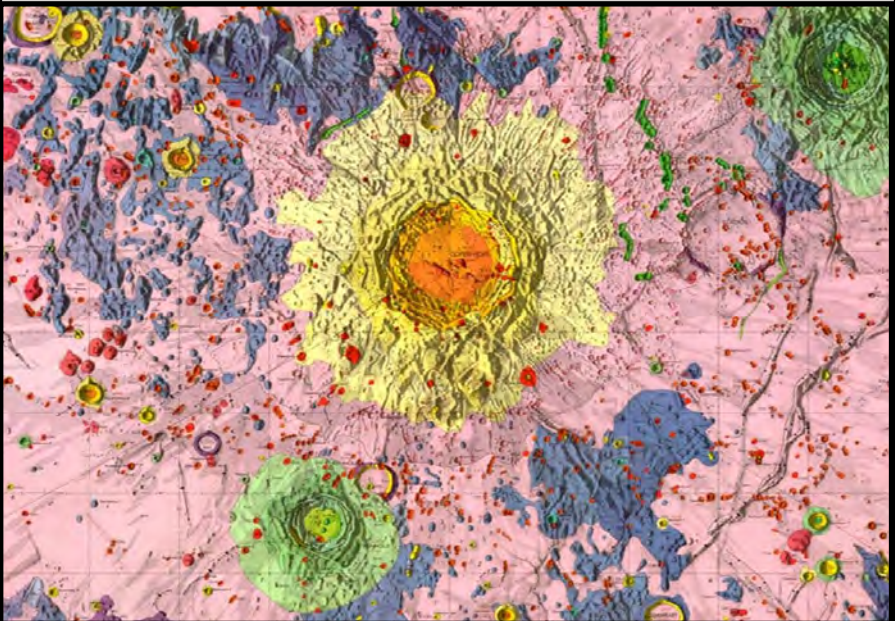
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(Geo Maps... Moon Landings continued from page 81)

With only three age categories, this map was very basic, and was soon superseded by more detailed studies. In 1961, geologist [Gene Shoemaker](#) circulated a prototype geology map of the area around the crater Copernicus. Shoemaker divided the materials he could see on the surface into five age classes and further subdivided some of these according to texture – such as “smooth” versus “hummocky”. He also offered interpretations for each of his units, such as “probably chiefly crushed rock” and “probably volcanic flows”. He even included cross sections indicating what structures may lie below the surface to a depth of several kilometers

Shoemaker collaborated with two colleagues to publish a considerably more detailed map of the same area in 1967. This was based on photographic images obtained by ground-based telescopes, supplemented by visual observations made using the 24-inch Lowell refracting telescope at Flagstaff, Arizona, to check fine details. The first-named author of this map was H.H. Schmitt, more commonly known as [Jack Schmitt](#), who as the Apollo 17 Lunar Module pilot in 1972 became the first – and to date, only – professionally qualified geologist to walk on the moon.



H.H. Schmitt, N.J. Trask, and E.M. Shoemaker, Geologic map of the Copernicus quadrangle of the moon, published 1967. USGS

(Geo Maps... Moon Landings continued on page 86)

NE/AIPG 2019 PUBLICATION SCHEDULE

Winter Newsletter

January 11	Deadline (Material to Editor)
January 25	Content to Publisher
February 11	E-mail to Members

Directory of Members

February 11	Deadline (Material to Editor)
March 15	Content to Publisher
April 15	E-mail to Members

Spring Newsletter

March 22	Deadline (Material to Editor)
April 5	Content to Publisher
April 22	E-mail to Members

Indian Summer Newsletter

July 26	Deadline (Material to Editor)
August 16	Content to Publisher
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FEBRUARY 4-5, 2020



NEW BRUNSWICK, NJ



New Jersey Site Remediation Conference Returns to New Brunswick

NJ LSRPA's power packed New Jersey Site Remediation Conference will be returning to the Hyatt Regency in New Brunswick on February 4 and 5, 2020. A key initiative of the Conference will be to share technical and regulatory knowledge, experience, and professional judgment. Once again, the conference will be packed with learning opportunities to enhance professional fundamentals through technical, regulatory, and ethics courses. There will be communication avenues with other environmental professionals and the opportunity to meet and learn from sponsors and vendors that support licensed site remediation professionals with specialized services.

If you are interested in Sponsoring this event, please e-mail njsrcsponsor@gmail.com and you will be added to the list to be sent the prospectus when it is available early Fall 2019. If you are interested in submitting an abstract of a poster, please view the 2020 Call for Abstracts page (See page 87) or visit our website: <https://www.lsrpa.org/nj-site-remediation-conference>

We look forward to seeing you in February!

The New Jersey Site Remediation Conference (NJSRC) is the only conference dedicated specifically to the needs of the Licensed Site Remediation Professional (LSRP) and professionals conducting site remediation under the LSRP program. It promotes the core principles of the LSRP Association (LSRPA) and provides LSRPs and other environmental professionals with the opportunity to enhance their professional practice and showcase their technical, regulatory, and consulting expertise.

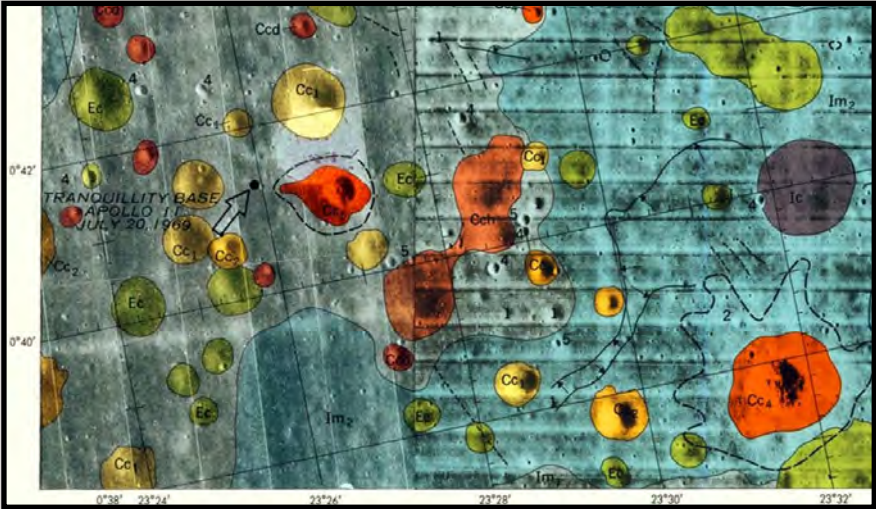
We welcome abstracts for oral and poster presentations for topics related to the LSRP practice and the remediation of contaminated sites, with emphasis on the following themes:

- ◆ Innovative approaches to investigation and remediation;
- ◆ Expedited site closure;
- ◆ Assessing remediation effectiveness
- ◆ Remediation in fractured rock and complex geology
- ◆ Advanced diagnostic tools
- ◆ Resilience incorporated in LSRP site remediation
- ◆ Green and sustainable remediation in the LSRP program
- ◆ Ecological assessment and remediation
- ◆ Vapor intrusion assessment and vapor intrusion data evaluation
- ◆ Relevant academic research projects, including emerging contaminants, novel remediation technologies, biogeochemistry, geoinformatics, NJ Geology

If you have any questions, you can contact us at



Landing Site Maps



Part of the Apollo 11 landing site geologic map published in 1970 at a scale of 1:25,000. The stripy background is an artefact of the photographic strips used as the base map. USGS

Subsequent lunar maps began to use pictures obtained by spacecraft orbiting the moon ahead of Apollo 11. Maps were made of all the proposed Apollo landing sites, including some that were never visited. At first, these relied heavily on photographs taken by the five Lunar Orbiter uncrewed lunar satellites. Later Apollo landing sites were mapped with the aid of pictures taken during earlier Apollo missions.

Although the moon walkers discovered that some of the geology mapped from orbit had been misinterpreted, each unit did prove to be genuinely worth investigating so that time on the surface was better spent than by blundering around at random. For example, the Cayley Plains where Apollo 16 landed were thought to be volcanic, but turned out to be an equally interesting unit made of welded lumps of older rock fragmented by impacts.

Geological mapping continues today, even on bodies where there is no prospect of human visitors in the foreseeable future. The United States Geological Survey, which published the Apollo maps, has since published maps of at least parts of every other rocky planet and several smaller rocky or icy bodies. In Europe, an effort is underway to prepare the first detailed geological maps of the whole of Mercury in preparation for the 2025 arrival of BepiColombo in orbit about the planet.

Some of those maps are being disseminated by the European Commission project Planmap, which is also preparing immersive 3D virtual environments of potential landing sites on the moon and Mars for astronaut training.

Ultimately, we have the Apollo missions to thank for a lot of our geological knowledge about the moon. The geological maps and the rock samples they enabled astronauts to bring back to Earth have given us invaluable information about the history of the moon, even though some of the haul has yet to be studied, 50 years on.

Part of a pre-mission geological map covering the Apollo 17 landing site (David H. Scott and M. H. Carr), and published at a scale of 1:250,000. The area shown is 45km east to west. USGS



(End)

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(End)

Celebrating 34 Years of Scholarships! The Angelo Tagliacozzo Memorial Geological Scholarship

The Angelo Tagliacozzo Memorial Geological Scholarship was established by the Northeast Section of the American Institute of Professional Geologists in late 1986. The first Scholarships were presented to undergraduate Geology students in 1987.

ATMGS recognizes the dedicated leadership and service which Angelo provided to NE/AIPG, to AIPG, and to the geological profession, until his untimely passing on October 11, 1986. The Scholarship furthers Angelo's goal of acquainting young geologists with AIPG and with AIPG's importance to the geological profession.

ANGELO TAGLIACOZZO (1936 - 1986)

Angelo Tagliacozzo received his doctorate in Geology from the University of Rome (Italy) in 1962. Thereafter, he worked in various positions as geologist, geophysicist, and hydrogeologist, which included assignments abroad, in the U.S., and with the United Nations. Angelo provided exemplary service to AIPG at the Section and National levels. He was a Northeast Section Executive Committee Member (1973-1982), Vice President (1977-1978), President (1979-1980), National Advisory Board Delegate (1981-1982), and Screening Board Chairman (1984-1986). Angelo's dedication to and leadership of the Northeast Section Screening Board has become the ultimate standard against which service in such a position is measured. Angelo also served as an AIPG National Executive Committeeman (1982); he was a vigorous advocate of measures to increase professionalism. Angelo was (and will be remembered as) a respected professional...and a friend.

THE SCHOLARSHIP

NE/AIPG grants Scholarships to undergraduate geology students annually. The Scholarships are designed to help with the cost of summer field courses, textbooks, and other aspects of geological education. Scholarships are awarded, both on academic achievement and on financial need, to students enrolled in recognized geology programs at colleges or universities in New England, New Jersey, & New York.

YOUR CONTRIBUTIONS

Your participation is encouraged in support of this dynamic memorial to Angelo and his recognition of the importance of AIPG to the geological profession. Contributions to the Scholarship Perpetual Trust Fund should be written to:

Angelo Tagliacozzo Memorial Geological Scholarship Trust Fund, and mailed to:

**NE/AIPG Geological Scholarship Trust Fund
c/o Dennis McGrath, CPG
P.O. Box 472
Hastings-on-Hudson, NY 10706-0472**

All Contributions are invested perpetually, with earnings thereon used solely for the Scholarship. NE/AIPG bears all costs of administration. Please ask your employer about Matching your contribution, and Additional corporate contributions.

For further information, contact Dennis McGrath:
mcgrathdg@gmail.com Cell: 914-424-8816

Memorandum

To: Dennis McGrath, Chairman, ATMG Scholarship, Northeast Section, AIPG

From:

Date:

Re: *I'm Taking the Pledge: **I'M IN FOR 2020!***

Dear Dennis,

Just a quick note to let you know that I'm 100% with you when it comes to achieving the Section's goal of 100% participation in support of the Scholarship Perpetual Trust Fund during 2020, the 34th Anniversary of the Scholarship! I agree with your encouragement that each and every Section Member make a contribution in accordance with their ability... and this is the one time when I don't want to be the odd person out!

I'M IN FOR 2020!

For 2020, the 34th Anniversary, I'm considering pledging... Thirty Bucks A Week, Thirty Bucks A Month, or Thirty Bucks for the Year!

Now, I know it could be more—and you know it could be less!—but I am committed to contributing as much as I can, so I'm not going to delay it any longer: **I'M IN FOR 2020!**

Yes, my personal budget is tight, but I figure that, somehow, I can set aside \$30 each month (aka the cost of weekly lattes) this year to give back to the profession that has given me so much. Also, I just wanted to tell you I am delighted to know that every one of those hard-earned dollars that I contribute will be INVESTED in the Scholarship Perpetual Trust Fund, so my contribution today can keep on giving, year after year!

And that makes me feel like my contribution really means something, both now and in the long term! I have thought it over, and I know how important 100% participation is for Section pride! So, Dennis, **I'M IN FOR 2020**

Professionally yours,

Times are really (GREAT / poor), so I am pledging:

_____ 30 Bucks A Week (\$1560 for 2020)

_____ 30 Bucks A Month (\$360 for 2020)

_____ 30 Bucks A Year (\$30 for 2020)

Other: _____ (Every little bit is better than nothing!)

___ I'll make it easy on you; I have enclosed my check, made out to "*Angelo Tagliacozzo Memorial Geological Scholarship Trust Fund.*"

___ Please invoice me for my 2020 pledge by 10/31/20. I'll pay by 12/1/20.

Signed: _____

Name Printed: _____

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