

**Dr. Teresa Jordan**  
(Cornell University)

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- Sponsor Recognition

**The Crossword Puzzle is back!**

**4 January 2023– 7:00 PM - VIRTUAL ONLY**

Dr. Teresa Jordan (Cornell University) will present:

## **Cornell's Geothermal Heat Aspiration and 2022 Cornell University Borehole Observatory**

Although geothermal energy is available everywhere, tapping this energy source as direct-use heat has lagged. Successful large scale direct-use heat systems demonstrate the commercial potential, drawing heat from rocks whose temperature is roughly the same as that of central New York at 6000-10,000 ft depth. Cornell University is advancing toward a large-scale demonstration of the potential to heat the Ithaca campus with ~70-90 °C geothermal heat. If successful, this would be a major part of displacing Cornell's fossil energy by 2035 and, also, it would advance the growth of this new energy sector elsewhere in the region.

This presentation will summarize a decade of analysis of archived data from hydrocarbon exploration and development wells which led to an understanding of the variability of thermal gradients and reservoir properties in the Appalachian Basin rocks of New York, Pennsylvania, and West Virginia. However, those data provide scant insight to fluid flow potential in the Cambrian strata and no information for the metamorphic basement. Consequently, to advance analysis and design of a geothermal reservoir, a 3-km deep geothermal exploratory well -- the Cornell University Borehole Observatory (CUBO) -- was drilled on the Ithaca, NY campus in the summer of 2022. The drilling operations, borehole completion, and contracted experts were very similar to those of a standard Appalachian Basin gas drilling program, overseen by NY-DEC's standard regulations for a stratigraphic well.

CUBO extends through largely low porosity and low permeability Paleozoic sedimentary rocks, and 390 ft into granulite-grade Grenville metamorphic basement rocks. Major objectives for wireline logs and borehole tests were to explore potential fracture-dominated reservoir targets, requiring stress, fracture distribution, and hydrologic data. CUBO is designed to be a dedicated observatory and testing borehole, separate from any future operational well pairs. The presentation will discuss the preliminary results of our analysis of the various geologic, hydrologic, logging, sampling, and downhole testing data acquired.

***An application is pending with NYSCPG for this presentation to count for 1 NY PDH towards your NY-PG continuing education requirements***

***This presentation will only be presented VIRTUALLY via ZOOM– registrants will receive Zoom login instructions the morning of 1/4/23***

**RSVP: <https://cnyapg.org/>**

**Next dinner meeting - February 2023**

# CNYAPG Newsletter

*The CNYAPG Newsletter is a monthly publication of the Central New York Association of Professional Geologists dedicated to sharing upcoming events, delivering regular articles of interest and providing the Membership a forum for discussion.*

*The newsletter is prepared by the Officers and Board of Directors of CNYAPG (listed below).*

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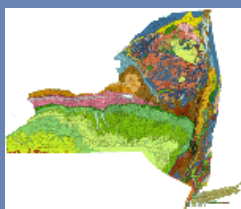
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## President's Message– January 2023

This is probably a little early, but Happy New Year! Welcome to 2023. We at CNYAPG would like to wish all of you good health and good fortune for this coming year. We would like to thank Dr. Tao Wen of Syracuse University for his excellent December talk on Using Machine Learning Approaches to Address Carbon Cycling. I believe, we all learned a lot about the complexities involved in using AI to address environmental issues. Thanks again. Just a reminder for all those wishing to get your PDH credits, make sure you answer the questions related to Dr. Wen's talk, in the email you were sent. Our January talk will be virtual only, so we will not be gathering at Spaghetti Warehouse this month. For our January guest speaker, we are pleased to announce that Dr. Teresa Jordan of Cornell University will be presenting work on Cornell's Geothermal Heat Aspiration and Cornell University's 2022 Borehole Observatory project. This should be a fascinating talk. Also, while on the topic of guest speakers, we have some excellent news to pass along to you. The CNYAPG 2022 Student Scholarship Recipient Helbert Garcia-Delgado (who will be presenting his research in March) was a co-recipient of the Geological Society of America's John T. and Carol G. McGill Award, which supports graduate student scholarships and research grants in engineering geology and geomorphology. Congratulation Helbert!

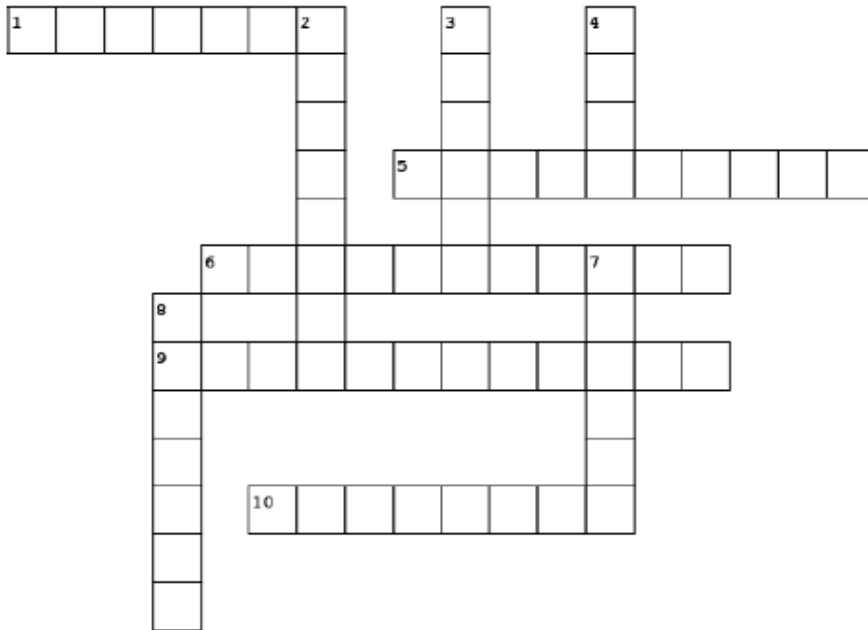
In other news, for those of you, New York PGs, in need of an ethics course for your upcoming license renewal, the New York State Council of Professional Geologists (NYSCPG) will be offering an online ethics course on January 25<sup>th</sup> at noon. If you have a January 30<sup>th</sup> renewal date, this is very timely. Also, just to let you know, for those of you with renewal dates in May, CNYAPG will be hosting an ethics talk for our regular April meeting.

Lastly, I believe this will be an exciting year for geology in New York State and in the geosciences as a whole, and a quote for the coming year: "Everything that exists in your life; does so because of two things, something you did or something you didn't do." – Albert Einstein

Have a happy and safe New Year,

Calvin K. Prothro, P.G., CPG  
President of CNYAPG

## CNYAPG Crossword # 7



### Across

1. Sediment-laden spring
5. Intelligence like ChatGPT
6. Largest State Park in US
9. Proposed newest Epoch
10. A CNY Nation, Creek and County

### Down

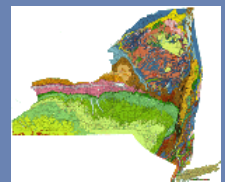
2. Lenticular igneous intrusion
3. Big & small new CNY employer
4. A tough welded volcanic ash
7. Tug Hill landform, Spanishly
8. SUNY ESF President

Crossword Puzzle courtesy of Lewis McCaffrey– Solutions on Page 5



Mud cracks in Glacier National park– Courtesy of Will Hackett

The CNYAPG was founded in 1993 to strengthen and advance the geological sciences. CNYAPG conducts regular meetings on the third Wednesday of each month from September to May. Meetings feature dinner and distinguished speakers whose presentations invite comment and discussion.



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### Environmental Petrography Services

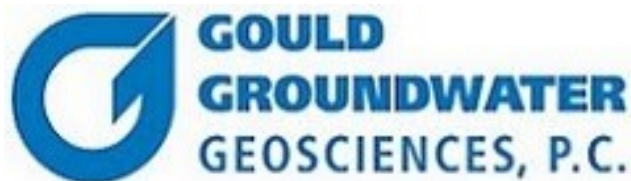
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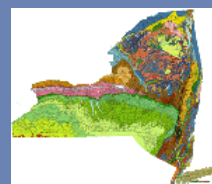
### Geochemistry/Chemical Hydrogeology

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## Upcoming Events

**January 4 2023** 7:00 PM– CNYAPG– Dr. Teresa Jordan– Cornell University—Cornell’s Geothermal Heat Aspiration and 2022 Cornell University Borehole Observatory —VIRTUAL Meeting—[www.cnyapg.org](http://www.cnyapg.org)

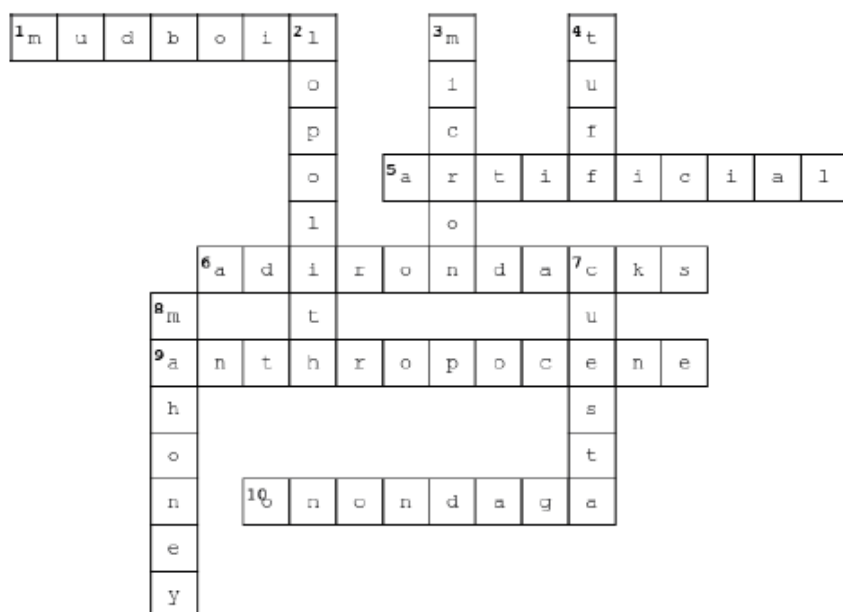
**February 1 2023** 7:00 PM– CNYAPG– Jesse Lubbers– Kimley Horn—Horizontal Directional Drills - Identifying & Mitigating Risks—Dinner Meeting—[www.cnyapg.org](http://www.cnyapg.org)

**March 1 2023** 7:00 PM– CNYAPG– Helbert Schneider Garcia Delgado – Syracuse University —Impact of climate and tectonics on erosion and sedimentation rates in low latitude active oro-gens: a case study in the Colombian Andes—Dinner Meeting—[www.cnyapg.org](http://www.cnyapg.org)

**April 5 2023** 7:00 PM– CNYAPG– Jean Patota—Your PG License and Tips to Keep It— Dinner Meeting—[www.cnyapg.org](http://www.cnyapg.org)

**May 3 2023** 7:00 PM– CNYAPG– Dr. David Finkelstein– Hobert & William Smith —Dinner Meeting—[www.cnyapg.org](http://www.cnyapg.org)

## Answers



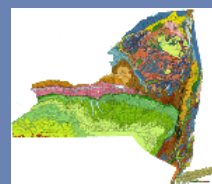
## CNYAPG Governance

### Membership Renewal

CNYAPG's membership period follows the CNYAPG meeting year from September through August. Renewals are due in September. To renew or become a new member, simply complete the membership form, available on our website at [www.cnyapg.org](http://www.cnyapg.org). Membership is only \$25 per year and all money received is used in support of our organization.

Join CNYAPG at our social networking groups on [Facebook](#) and [LinkedIn](#). These sites (always under development) will provide online forums for discussion, as well as another way to inform our members and networking opportunities. For more information about our social media sites e-mail us at [admin@cnyapg.org](mailto:admin@cnyapg.org).

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