



# Ohio Section American Institute of Professional Geologists

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November 2021 Newsletter

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## **AIPG Ohio Section Annual Meeting**

### **History of Structure Contour Mapping in the Appalachian Basin: 1870-1917**

**Presenter: Mr. James McDonald of the Ohio Geological Survey**

**Date:** Thursday, November 18, 2021

**Location:** The Fawcett Center, Ohio State University  
2400 Olentangy River Rd., Columbus, OH 43210

**Schedule:** Social hour begins at 5:00 pm followed by Dinner  
at 6:00 and Presentation at 7:00

**Event Registration Payment:** <https://www.aipg-ohio.org/eventdetails.php>

*See Page 9 for event details*

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## Message from the President

**Tom Jenkins, CPG-078922**

I love autumn, the cooler weather, beautiful trees, a return to hiking (too hot for that in summer). However, one thing I don't look forward to is the annual effort to recruit of AIPG executive committee officer candidates. It takes the efforts of individuals to keep the section running, and unfortunately to some degree it has boiled down to a core group cycling

through committee posts to keep the section operational. I am surprised by this, in part because connections made through AIPG have had such a large impact in my career. I started active involvement in AIPG in 1990, helping with the newsletter. I have been involved in some capacity or other for most of time since then. The professional connections I made through AIPG have led to numerous career development benefits. As an impact on my career, it ranks up there with getting my master's degree. If I retrospectively subtract AIPG from my career, I suspect things would have been much different, and much less successful. Sure, it was some work, but it has certainly paid off through expanding my network and building great friendships. Brent Huntsman has expressed the same perspective to me several times. So, think carefully about your career, and what you are doing that expands your network. There certainly are places other than AIPG to do that, but for me, the benefits of expanding my network through AIPG involvement have been considerable. If you are interested in volunteering with the Ohio Section of AIPG, please contact me at [tjenkins@eagoninc.com](mailto:tjenkins@eagoninc.com) or any member of the executive committee.

Tom Jenkins, CPG 7892  
2021 AIPG Ohio Section President

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# AIPG Ohio Student Scholarship Awards



Ohio Section AIPG president Tom Jenkins awarding \$500 scholarship checks to Erica Scarpitti and Molly Hunt

Ohio State University Students Molly Hunt (2020/2021 OSU student section president) and Erica Scarpitti (2020/2021 OSU student section vice president) applied for the 2021 AIPG National Undergraduate Student Scholarship. They were not selected by National, but considering the quality of their applications and service in maintaining the OSU student section, the executive committee voted to award them each \$500 in scholarship money. The scholarship checks were presented on September 24, 2021 in front of Mendenhall Lab. Molly and Erica were very grateful for the award, and both indicated it would be used towards graduate school applications.

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## Ohio Section 2021 Fall Meeting Recap

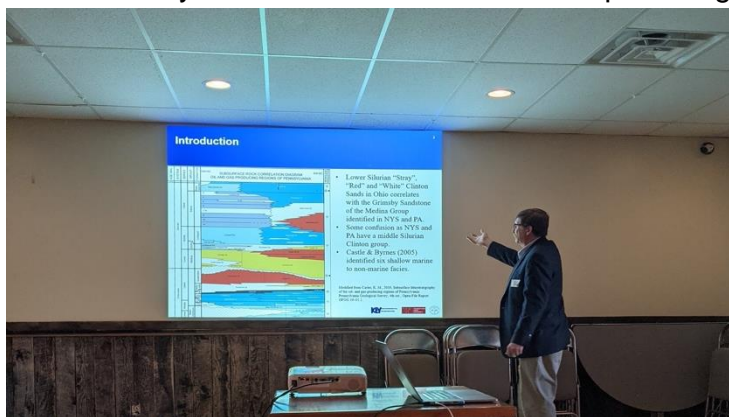
**Feature Presentations:** Monitoring Clandestine Burial Body Decomposition Using Geophysical Methods  
Presented By: Dr. Jeffrey Dick

A Statistical Review of Geophysical Well Log Data from the Lower Silurian Grimsby Sandstone, Mercer County, Pennsylvania and Possible Relationships to the 1998 Pymatuning Earthquake  
Presented By: Dr. Tom Jordan

**Contributed by Robert Andrews, CPG-11975**

The Ohio Section held its first in person quarterly meeting and dinner presentation since the beginning of the COVID-19 pandemic at the Boulder Creek Golf Club & Event Center in Streetsboro, Ohio on Thursday, September 16<sup>th</sup>. This was the third time the Section has held its Autumn Meeting at this location. In attendance was a large contingent of students from Youngstown State University (YSU) as well as professionals from the area. The event was sponsored by Alpha Analytical, Buckeye Elm Contracting, Environmental Remediation Contractors, Ohio Soil Recycling, and White Oak Environmental.

The event began with a lively social hour. Ohio Section President-Elect Robert Andrews, then welcomed attendees and provided opening remarks on Ohio Section activities and upcoming events. Guests were then treated to a delicious dinner provided by the Boulder Creek Event Center. At the conclusion of dinner, President-Elect Andrews introduced the evening's first featured speaker, Dr. Tom Jordan, a part-time faculty member at YSU and a Supervising Geologist/Geophysicist with Key Environmental, Inc. Dr. Jordan's presentation was entitled *A Statistical Review of Geophysical Well Log Data from the Lower Silurian Grimsby Sandstone, Mercer County, Pennsylvania and Possible Relationships to the 1998 Pymatuning Earthquake*

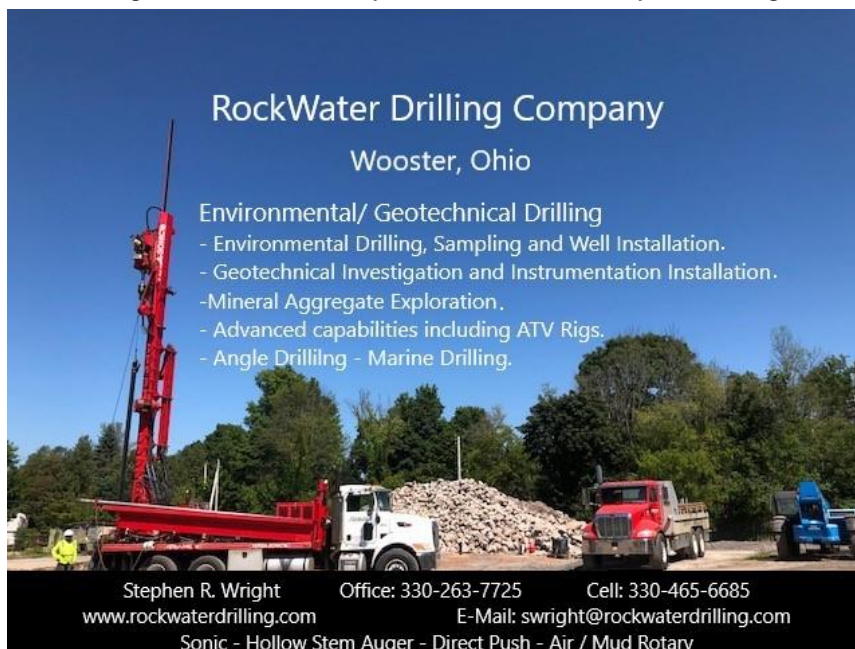


Dr. Jordan presenting to the audience.

Dr. Jordan began by providing a brief overview of the Lower Silurian Grimsby

Sandstone in Mercer County, Pennsylvania. He then delved into how calculating the Pearson's coefficient of skewness from gamma ray, neutron porosity, and bulk density geophysical logs can be used to identify oil producing zones within the sandstone. His study utilized 17 publicly available digital geophysical logs. According to Dr. Jordan, an unanticipated outcome from this research was the ability to detect offsets in geophysical marker beds possibly related to the fault system responsible for the 5.2 magnitude earthquake that occurred on September 25, 1998 along the Ohio/Pennsylvania border in Pymatuning, PA.

After a short question and answer period, President-Elect Andrews then introduced the evening's second speaker, Dr. Jeffery Dick, the Applied Geology Professor at YSU and owner of JD Geological and Environmental Services, LLC. Dr. Dick's presentation was entitled *Monitoring Clandestine Burial Body Decomposition Using Geophysical Methods*



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He began by discussing recent cases where geophysical methods have been used to located human remains. According to Dr. Dick, three main problems are associated with buried corps. The first of these is the amount of time elapsed between the burial and the investigation, which is usually 15 plus years. Second, burial locations are usually in areas where there is excessive signal noise making it hard to identify any remains. The source of this noise can be overhead powerlines and metal structures as well as buried debris not associated with a body. Finally, it is unknown how organic decomposition of human remains changes a geophysical signal over time.



Dr. Dick answering questions from the audience after his presentation

Given these challenges, Dr. Dick then described the simulated clandestine burial site being constructed on his personal farm to study the effects decomposition has on a human burial. Dr. Dick will be using mature hogs weighing 150 – 175 lbs. which they are suitable human proxies due their comparable fat to muscle ratio, anatomical makeup, skin coverage, and gut fauna. At this site there will be four simulated grave sites, each five feet deep. One will be located in the top of a slope in relative dry soil. Another will be located mid-slope with moist soil. A third will be located at the base of a slope with a seasonal high water table. The final location will be within boarding woods at the base of a slope with seasonal high water table. At each sites there will be 4 graves (an empty control grave, a grave with clothed pig, a grave with a clothed pig wrapped in a tarp, and a grave with clothed pig covered by hydrated lime). Dr. Dick be monitoring the graves over the next 5 to 10 years.

Following the presentation, Section President-Elect Andrews presented both Dr. Jordan and Dr. Dick with a gift card as a token of appreciation of their informative talks.

The Executive Committee would like to extend a special thanks to the YSU student chapter and their advisor Dr. Jeffery Dick, for their contributions in organizing the event. In addition, the Executive Committee would like to again thank Alpha Analytical, Buckeye Elm Contracting, Environmental Remediation Contractors, Ohio Soil Recycling, and White Oak Environmental for sponsoring the event. Their support is necessary for the section to be able to continue to help underwrite the costs of these events.



Members of Youngstown State University Student Chapter in attendance



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## Ohio Section 2021 Annual Meeting

*Feature Presentation:* History of Structure Contour Mapping in the Appalachian Basin: 1870-1917

*Presented By:* Mr. James McDonald

The Ohio Section of AIPG is pleased to host Mr. James McDonald at the Section's Annual Meeting presentation, which will take place on Thursday, November 18, 2021 at The Fawcett Center in Columbus. Mr. James McDonald will be presenting: History of Structure Contour Mapping in the Appalachian Basin: 1870-1917. This presentation has received two awards, the A.I. Levorson Memorial Best Paper Award and the Pittsburgh Geological Society Award. The Levorson is a national AAPG award given at the section level, presented for the best scientific paper given at the annual meeting of the Eastern Section. The Pittsburgh Geological Society Award is presented to the best presentation on Appalachian Geology. This event is sponsored by Alpha Analytical, Buckeye Elm Contracting, Environmental Remediation Contractors, Ohio Soil Recycling, and White Oak Environmental.

The event begins at 5:00 pm with social hour, followed by dinner at 6:00, and the feature presentation at 7:00. The cost is \$35 for members and guests or \$15 for students. Please preregister and submit payment for the event via PayPal through the AIPG Ohio Section website <https://www.aipg-ohio.org/payment.php>. Registration closes on at end of business on November 12, 2021.





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*History of Structure Contour Mapping in the Appalachian Basin: 1870-1917*  
by Mr. James McDonald

**ABSTRACT**

Subsurface structure contours have been used as a method in delineating anticlines since the 1870s. Between 1870 and 1900, there were a handful of geologists and mining engineers who began using map-based depictions of structure contours to show the relationship between anticlines and oil accumulations. These geologists – Benjamin Smith Lyman, John F. Carll, Edward Orton Sr., and Marius Campbell published some of the earliest structure contour maps. The early contributions of these geologists slowly advanced the technique of using structure contours to depict the subsurface geology and aid in the hunt for anticlines.

In 1902, William T. Griswold of the U.S. Geological Survey (USGS) created a technique to map structure contours using plane table and alidade in the Cadiz, Ohio area. This technique was used to identify anticlinal traps for petroleum exploration. Griswold also taught this technique to his geologist colleagues, including Malcolm J. Munn and Frederick Clapp. In 1908, Griswold left the USGS and started one of the first petroleum-geology consulting firms in the world, W.T. Griswold & Company of Marietta, Ohio, with his former colleagues Edgar McCrary and Fred Hutchinson. After two years, Griswold left to become the Chief Geologist of the Philadelphia Company. W.T. Griswold & Company was renamed the Hutchinson &

McCrary and was in operation for over four years in Marietta, Ohio, until it was dissolved in 1912.

Between 1908 and 1917, more geologists began using structure contours to identify anticlines in the subsurface in the Appalachian Basin. Griswold left the Philadelphia Company to work with Guffey and Gillespie in the Appalachian Basin from the early 1910s through the late 1920s. Between 1908 and 1917, the USGS hired many geologists to replace those who had left government employment for the private sector. These new USGS geologists, such as D.D. Condit, G.S. Rogers, and C.A. Bonine, continued mapping and publishing structure contour maps in the Appalachian Basin up to the beginning of World War 1.

During the 1910s, major oil field discoveries were made in Oklahoma. This brought many people to the Midcontinent to explore for oil, including geologists such as Edgar McCrary and Malcolm Munn, who applied geological techniques. Because these geologists were extremely successful in finding oil, the industry adopted their techniques. Mapping structure contours using plane table and alidade was the practical technique that made the use of geology indispensable to oil and gas exploration.

**Bio:** James McDonald is a Geology Program Supervisor for the Ohio Department of Natural Resources, Division of Geological Survey (Ohio Geological Survey). He graduated with a BS in geology from the University of Delaware and a MS in geophysics from the Ohio State University. James has been a geologist and GIS specialist with the Ohio Geological Survey for over 30 years, with an expertise in the energy resources and application of GIS technology to geologic maps and data. He has worked on a number of different projects, such as the Cambrian-Ordovician carbonate stratigraphy of Ohio, the GIS conversion of the oil- and gas-well location maps of Ohio, mapping the abandoned underground mines of Ohio, calculating the CO<sub>2</sub>-sequestration capacity in the midwestern United States, and evaluating the enhanced oil recovery potential of the Utica/Point Pleasant interval in Ohio. James is a member of the Ohio Geological Society, serving as President in 2001-2002, and is a member of AAPG, serving as President of the Eastern Section of AAPG in 2013-2014.



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## ODNR Accepting Applications for Geologic Research Grants

The Ohio Department of Natural Resources (ODNR), Division of Geological Survey is accepting applications for the Ohio Geology Student Research Grant program. For a seventh academic year, the program will support graduate and undergraduate students who conduct geologic research in the state.

The ODNR Division of Geological Survey will award grants of \$2,500 to three earth science students at Ohio colleges and universities. Each grantee will be selected based on the quality of their application, the strength of their professor's letter of recommendation, and the relevancy of their proposed research.

"Small scholarships like these had a big impact on my college experience," ODNR Division of Geological Survey Chief and State Geologist D. Mark Jones said. "One of the most important things we can do is to continue making these opportunities available. They benefit both students and Ohio citizens."

Previous grant recipients have conducted studies that further our understanding of Ohio geology, including mapping of stratigraphy and glacial features, assessing impacts of human activities on soils, and delineating stream patterns, among other projects.

The deadline for application submission is Friday, Dec. 31. The application and complete submission guidelines can be found on the Division's website. Candidates must be enrolled in a full-time graduate or undergraduate earth science studies program at an accredited college or university in Ohio for the 2021–2022 year.

ODNR ensures a balance between wise use and protection of our natural resources for the benefit of all. Visit the ODNR website at [ohiodnr.gov](http://ohiodnr.gov).

For more information, contact:

Stephanie O'Grady, ODNR Office of Communications  
614-265-6860

-or-

Chuck Salmons, ODNR Division of Geological Survey  
614-265-6596

### Letters to the Editor and Editorial Submittal Guidelines

The Ohio Section welcomes and encourages membership discourse via the Section newsletter on relevant geopolitical and geological topics, in accordance with our chartered purpose. Contributing authors are requested to abide by the following guidelines to ensure civility and professionalism.

1. Scientific interpretations should include accurate and effective references.
2. Opinion pieces should be presented with reasoning. Fellow members may choose to comment or challenge a submittal with their own contribution.
3. Authors must abide by the AIPG Code of Ethics. Any author who violates this code will not be published. Authors must be respectful to fellow members, all political parties, officials and candidates.
4. Letters to the Editor should be under one page in 12 pt. Arial font.
5. Member authors should provide their name and certification number.
6. The Ohio Section also welcomes and will consider relevant articles from non-members, provided contributions abide by the above stated guidelines.

Contributions to the Ohio Section newsletter do not necessarily reflect the opinion of the Ohio Section or the editor. We reserve the right to edit for clarity and space considerations. Please send submittals to the editor at [nnovak@eagoninc.com](mailto:nnovak@eagoninc.com).

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