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November 2019 Newsletter

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AIPG Ohio Section Fall Meeting

Current Organization, Projects, and Research at the Ohio Geological Survey

Date: Thursday, November 21, 2019

Location: La Scala Italian Bistro
4199 W. Dublin Granville Rd, Dublin, OH 43017

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 4 for event details

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Message from the President

Timothy E. Brown, CPG-11637

Fellow AIPG Members,

The change of seasons is upon us. The daylight hours are noticeably withering. Leaves have transformed into fabulous colors and have begun their weeks-long sprinkle upon the ground surface. Cooler temperatures have started to prevail. The holiday season is just around the corner. The year has seemingly rushed by, as has the Ohio Section calendar. The Section has accomplished much so far in 2019 and looks forward to finishing the year strong. With that being said, the planning for 2020 is already in progress.

In mid-September President-Elect Robert Andrews and I attended the AIPG National Conference in Burlington, Vermont. Also making the trip was Past-President Colin Flaherty as a member of the National Advisory Board. It was an honor to represent the Ohio Section and interact with fellow geologists from across the country. It was great to meet other Ohio students and professionals that had made the trip. If you have never been, I would highly recommend attending a future National Conference. Next year it will be held in Sacramento, California in October.

Attending the National Conference provides one with a fresh perspective on the purpose of AIPG. Our organization continues to advocate for the profession of geology. AIPG continues to team with ASBOG on the development of a new membership category that will incorporate state licensing requirements in response to recent attempts to deregulate professionals. The organization continues this effort while promoting ethical conduct and professional development. Continual advancement of the geological community is dependent on the inclusion of young professional members and students who may receive a wealth of knowledge from established professional members. As stated by incoming 2020 AIPG National President Todd McFarland of Tennessee, "if a profession is to thrive, every member of the profession must be involved."

In late September the Ohio Section held its Fall Meeting and Dinner Presentation in northeast Ohio in Streetsboro at the Boulder Creek Golf and Event Center for the second consecutive year. These meetings in the outlying regions (away from central Ohio) are vital to include members situated in other parts of the state. It was a successful event and was great to see a diverse mix of professionals and students including a large contingent from the Youngstown State University (YSU) student chapter who attended. The speaker was Dr. Thomas Jordan of YSU who delivered a talk entitled *Evaluating AI to Assist with Predictive Landslide Susceptibility Modeling for Well Pad and Pipeline Planning and Design*. Also attending the event was Kent State University graduate student Israel Olaoye, who had recently won first place at the AIPG National Conference

with his poster presentation: *Assessing Land Use/Land Cover Change and Climate Change Vulnerability Using Machine Learning, Markov Chain Model and GIS; A Case Study on Old Woman Creek Watershed, Ohio.* Mr. Olaoye brought his poster to the event and shared it with the YSU students and Dr. Jordan at the end of the evening.

Finally, we are excited to have Mike Angle, the new Chief of the Ohio Geological Survey, speaking at the Annual Meeting and Dinner Presentation. I expect that attendees will hear an update on happenings at the Survey, so please plan on attending. If you have any questions or would like more information about the AIPG Ohio Section, please don't hesitate to reach out to me or another Executive Committee member.

Thank you,

Tim Brown, CPG-11637
2019 AIPG Ohio Section President

Calendar of Upcoming Events	
November 21, 2019	AIPG Ohio Section Annual Meeting and Dinner Presentation – La Scala Italian Bistro, 4199 West Dublin-Granville Road, Dublin – guest speaker will be Mr. Mike Angle, Ohio Geological Survey Director and State Geologist www.aipg-ohio.org .



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Ohio Section 2019 Annual Meeting and Dinner Presentation

Feature Presentation: Current Organization, Projects, and Research at the Ohio Geological Survey

Presented By: Mike Angle, Ohio Geological Survey Director and State Geologist

The Ohio Section of AIPG is pleased to host Mr. Mike Angle at the Section’s Annual Meeting and Dinner presentation, which will take place on Thursday, November 21, 2019 at the La Scala Italian Bistro, W. Dublin-Granville Road, Dublin, Ohio. Mr. Angle will be presenting: Current Organization, Projects, and Research at the Ohio Geological Survey.

The event begins at 5:00 pm with social hour, followed by dinner at 6:00, and the feature presentation at 7:00. Please preregister and submit payment for the event via PayPal through the AIPG Ohio Section website <https://www.aipg-ohio.org/payment.php>. Please RSVP as soon as possible and pay for the event.

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Current Organization, Projects, and Research at the Ohio Geological Survey

by Mike Angle

ABSTRACT

The Ohio Department of Natural Resources (ODNR), Division of Geological Survey was founded in 1837 and has been continuously authorized since 1869. The Division's mission is to provide geologic information and services needed for responsible management of Ohio's natural resources. It researches and reports on the geology of the state and is Ohio's archive for geologic information. Main offices are located on the ODNR main campus in north Columbus and at the Horace R. Collins Laboratory (HRC) at Alum Creek State Park. The Division's staff of 37 provides technical expertise to citizens, industry, and other agencies of government concerning coal, oil and gas, minerals, and geologic hazards. During FY 2019 reporting period, the Division's budget consisted of severance tax income on fuel and non-fuel commodities; federal and state grants; departmental-allocated funds; and income generated from the sale of publications, maps, and data.

The Division is organized into seven groups: Administration and Fiscal, Energy Resources, Geologic Mapping and Industrial Minerals, Groundwater, HRC/Lake Erie Science (HRCLES or "Hercules"), Publications, and the Geologic Records Center and Archives. The Groundwater Group was added to the Division in June 2017, whereas it was previously housed in the ODNR Division of Water Resources. This marks the first time that the Division of Geological Survey has contained a groundwater section since the 1970s. The Groundwater Group greatly expands the mission, importance, and visibility of the Division.

The talk will discuss the importance of the Utica, the function of the groups and highlight a variety of ongoing projects and mapping. The staff has embraced GIS, LiDAR, and other technologies to achieve its mission.



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I obtained my BS and MS in Geology at the University of Akron and then worked on a PhD at Miami University in Oxford, Ohio. My area of specialization has been primarily in mapping glacial geology and hydrogeology. I have worked at ODNR the last 34+ years roughly splitting my time between the Ohio Geological Survey and the Division of Soil & Water Resources, Groundwater Resource Section. I also worked for a consulting geotechnical engineering firm doing UST removal and site evaluations, then went back to ODNR. I was promoted to Supervisor for the Geologic Mapping

Group at the Ohio Geological Survey in 2007 and became the Asst. Chief/Asst. State Geologist of that Division in late 2012. In February of 2109, I was appointed as the 14th State Geologist and Division Chief.

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Recap of Ohio Section Fall Meeting and Dinner Presentation

Feature Topic: **Evaluating AI to Assist with Predictive Landslide Susceptibility Modeling for Well Pad and Pipeline Planning and Design**

Presented by: **Dr. Thomas Jordan, Youngstown State University**

The Ohio Section held its Autumn Meeting and Dinner Presentation at the Boulder Creek Golf Club & Event Center in Streetsboro, Ohio on Thursday, September 26th. This was the second consecutive year that the Section has held the Autumn Meeting at the venue which has proved to be a enjoyable location. The event was attended by a diverse mixture of professionals and students, with a sizeable contingent from Youngstown State University (YSU), which represented their student chapter well, as well as one student from Kent State University. The event was sponsored by **ALS Global, Alpha Analytical, Buckeye Elm Contracting, EA Group, Ohio Soil Recycling, and Pace Analytical.**

The event began with a lively social hour. Ohio Section President Tim Brown then welcomed attendees and provided opening remarks regarding Ohio Section activities and upcoming events. Guests then enjoyed a delicious buffet dinner provided by the Boulder Creek Event Center. At the conclusion of dinner, YSU student chapter president Noah Allen introduced the evening's speaker, Dr. Thomas Jordan of YSU, who presented, *Evaluating AI to Assist with Predictive Landslide Susceptibility Modeling for Well Pad and Pipeline Planning and Design.*



Dr. Thomas Jordan of YSU presenting *Evaluating AI to Assist with Predictive Landslide Susceptibility Modeling for Well Pad and Pipeline Planning and Design.*

Dr. Jordan explained that his predictive landslide susceptibility model is being developed to streamline and focus the current approach commonly used to address planning and design data needs at proposed natural gas well pad sites and along the projected limit of disturbance for pipeline construction projects. This predictive model uses a weighted indicator parameter approach to evaluate landslide susceptibility at targeted areas. Artificial intelligence (AI) methods are being considered to determine region specific weights for each indicator parameter within the model with the goal of converging on a landslide susceptibility index value. The goal of this project is to provide a process where a landslide susceptibility index value can be determined from any study area where shallow test boring data from the National Coal Resources Database System

(NCRDS) is available.



Meeting attendees intently listening to Dr. Jordan's talk.



Ohio Section President Tim Brown presenting Dr. Jordan with a plaque showing the Section's appreciation for his presentation.

A unique computer based work-flow is being refined at YSU to screen, compile, and extract information from the NCRDS database that is of specific interest to our effort. The output from YSU's work-flow application is then imported into a three-dimensional (3-D) gridding software. Data from published structure contour maps are used to bias the gridding algorithm for the creation of a 3-D model that is interfaced with geographical information system (GIS) software. Critical indicator parameters considered for this model include proximity to existing landslides as mapped by others, slope, slope aspect, presence of over-dips, and land cover. Preliminary research indicates that the available landslide delineation efforts for our current area of interest are based on published studies completed prior to the development high resolution remote sensing

methods such as topographic mapping using LiDAR or high-resolution aerial photography. Therefore, a component of this study also involves evaluating the feasibility of using a machine learning approach to detect previously undocumented landslides through examination of LiDAR and high-resolution aerial photography.

The output from the 3-D lithologic model was integrated with the other indicator parameter data using GIS software. Information provided by industry is currently being used as a basis for the development of an AI neural network to efficiently converge on a defensible region-specific indicator parameter weighting process. This research is currently focused on southwestern Pennsylvania, the northern panhandle of West Virginia, and southeastern Ohio but our methods can be applied anywhere test boring data from the NCRDS is available.

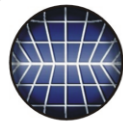
Following the presentation, Section President Brown presented a plaque to Dr. Jordan in appreciation of his informative talk. Shortly afterwards, a winner for the 50/50 drawing was pulled. The lucky attendee was former Ohio Section President Tom Jenkins. Tom graciously donated his \$63 winnings back to the YSU student section.

Of special note, the event was attended by Kent State University graduate student Israel Olaoye, who had recently won first place at the AIPG National Conference with his poster presentation: *Assessing Land Use/Land Cover Change and Climate Change Vulnerability Using Machine Learning, Markov Chain Model and GIS; A Case Study on Old Woman Creek Watershed, Ohio*. Mr. Olaoye brought his poster to the event and shared it with the YSU students and Dr. Jordan at the end of the evening.



Meeting attendees from the Youngstown State University student chapter.

The Executive Committee would like to thank the YSU student chapter and their advisor Dr. Jeffery Dick, for their contributions in organizing the event. And a special thanks to Dr. Jordan for an excellent and informative presentation. It is our hope that Ohio Section meetings will continue in northeast Ohio, and the YSU student chapter will continue to grow and flourish, and new student chapters in the area can be established. ●



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News from Wright State University *Student Chapter of AIPG*



The WSU Student Chapter of AIPG has provided the *Newsletter* with a listing of officers for the 2019-2020 academic year. The WSU Student Chapter is led by Dr. Stacey Hundley. The WSU Student Chapter of AIPG officers for the current academic year include the following:

Wright State University Chapter of AIPG, 2019 – 2020		
OFFICERS	President	Mike McKean
	Vice President	Paige Wilms
	Secretary	Sam Mulkey
	Treasurer	Margaret Lingane
ADVISOR	Stacey Hundley, Ph.D., Lecturer, Earth & Environmental Sciences Department, MEM-2546	

Below are the fall events that were held this semester and the upcoming winter events that are planned for the winter/spring:

- Hike at Glenn Helen to honor Megan Betts (September 27th)
- Highway Clean-up event for the Adopt-A-Highway section of I-675 (now scheduled for November 3rd)
- Winter Dinner for Ohio Section at WSU Nutter Center Berry Room on February 20th
- Spring trip to Ohio Caverns (TBD)

Please take a moment and welcome these WSU Student Chapter of AIPG officers and their fellow student members at a future AIPG event. ●



News from The Ohio State University
Student Chapter of AIPG

The Ohio State University Student Chapter of AIPG has provided the *Newsletter* with a listing of officers 2019-2020 academic year.

The Ohio State University Chapter of AIPG, 2019 – 2020		
OFFICERS	President	Ljubomir Risteski
	Vice President	Molly Hunt
	Secretary	
	Treasurer	Kira Harris
ADVISOR	Frank Schwartz, Ph.D., College of Arts and Sciences, School of Earth Sciences	

Firstly, in January, we went on a small, somewhat impromptu trip to Ohio Caverns where we actually had a geologist as our tour guide, so we talked shop the whole time!



Next, in March, we had our big trip to Mammoth Cave and we actually had a private tour with the park geologist, Dr. Rickard Toomey! It was wonderful and we had a great trip.

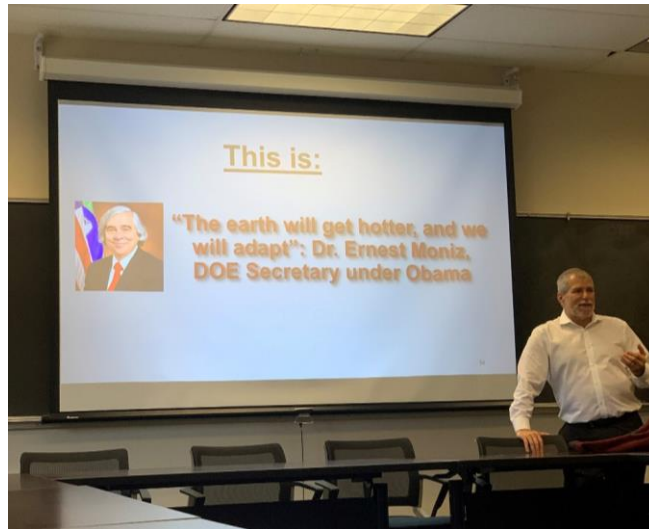


These photos of our group underground were actually in a local, privately owned cave named Crystal Onyx Cave. There, we also had a private tour where we saw some really cool, rare stuff! In addition to that, here are some pictures of us where we were entering our other tours in the cave.

At the beginning of October, we had a cookout and then a field trip the next day to the Cincinnati museum where we actually toured their paleo and geo collections at the Geier Center. Then we completed the trip with a stop at Caesar's Creek, of course!



And finally, towards the end of October, when we have our alumni come back, we had one of them, Dr. Jory Pacht give a talk about energy consumption/demand on a global scale and its impact on the future.



Please take a moment and welcome these OSU Student Chapter of AIPG officers and their fellow student members at a future AIPG event. ●



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News from Youngstown State University Student Chapter of AIPG



**YOUNGSTOWN
STATE UNIVERSITY**

Youngstown State University Student Chapter of AIPG has provided the *Newsletter* with a listing of officers for the 2019-2020 academic year.

Youngstown State University Chapter of AIPG, 2019 – 2020		
OFFICERS	President	Noah Allen
	Vice President	Eric Lloyd
	Secretary	Maura Salyard
	Treasurer	Justus Land
ADVISOR	Dr. Jeff Dick, Professor and Chair, Geological & Environmental Sciences	

The YSU Student Chapter recently went on a great weekend camping trip to Mohican State Park. The pictures are from this trip.

This winter we are planning on going to Cuyahoga National Park and in the spring, we are planning another trip back to Kelley’s Island. We had a group volunteer for silly science Sunday about a month ago where kids were able to dig for fossils and get their



picture taken with an awesome geological background. We have also been participating in a lot of student organization recruiting events and will be recruiting at the university crash day

where high school students get to explore campus all day. We will also be volunteering at The Cleveland museum of Natural History Fossil Fest in the spring.

We want to thank AIPG for the continued support!



Please take a moment and welcome these YSU Student Chapter of AIPG officers and their fellow student members at a future AIPG event. ●



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Public Outreach Opportunity

Contributing author Tom Jenkins, CPG-07892

The Cleveland Geological Society is looking for informal speakers to attend their regular meetings and speak on topics of geologic interest. Meetings are held on the third Wednesday of the month from September through May at 7:30 pm in Classroom A on the Cleveland Museum of Natural History's lower level (unless otherwise noted on the website).

The Cleveland Geologic Society was founded in 1957. Membership is open to people interested in all aspects of geology. Monthly meetings feature talks on diverse topics, such as the geology of far-flung places, explanations of local points of interest, and paleontology. Members and visiting geologists are invited to speak. The society also holds field trips to local sites and occasionally more distant locales.

The Cleveland Geologic Society helps support a number of museum programs. Among these are the summer **Kirtlandia Research Internship Program** and **Archaeology & Earth Science Day** in October.

For additional information, check out the website at <https://www.cmnh.org/join-support/clubs-societies/Cleveland-Geological-Society>. To present a topic as a speaker please contact Doug Dunn (DDunn@cmnh.org) at the Cleveland Museum of Natural History.

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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 sbeanland@eagoninc.com.



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