

## Ohio Section American Institute of Professional Geologists

Chartered 1965

May 2014 Newsletter

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#### **May Meeting and Dinner Presentation**

## Unintended Consequences: Phosphorus and Alum in Grand Lake St. Marys, Ohio

by Dr. Chad Hammerschmidt, Wright State University

**Date:** May 22, 2014

Location: La Scala

http://www.lascalaitalianbistro.com/LaScala.html

Schedule: Social Hour at 5 pm; Dinner at 6 pm;

Presentation at 7 pm

RSVP: President-Elect Tom Jenkins; tjenkins@eagon.cc

Details on Page 3

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## Message from the President Curtis J. Coe, CPG-06240

The Ohio Section has continued to be active during the first quarter of 2014. The 5th Annual AIPG Conference, "Marcellus, Utica, and Point Pleasant Shale: Energy Development and Enhancement by Hydraulic Fracturing" was held April 16th and 17th in Columbus, Ohio. By all accounts, the conference was a huge success. The Ohio Section again manned a booth at the meeting.

The Wright State University (WSU) AIPG Student Section has continued to be quite active. WSU students organized a field trip to Caesar Creek

State Park on April 7, 2014. All that attended had a great time and, were able to collect Ordovician fossils. The initiative, resourcefulness and planning by the Wright State University AIPG Student Section is very encouraging.

Through the initiatives of Ohio Section Student Chapter Chair Robin Roth, the AIPG Student Chapter at The Ohio State University (OSU) is active once again! The following documents have been approved by both OSU and the AIPG: Constitution and Bylaws, signed Endorsement, Petition, and Student Chapter Information Sheet. On February 13, 2014, Robin Roth and I met with five enthusiastic students and their staff advisor to express our interest in reactivating the AIPG Student Chapter at OSU and to discuss the next steps in such a process. This meeting led to the March 20, 2014 introductory meeting that included 25 students, an Academic Counselor and three Ohio Section CPGs, including Robin Roth, President-Elect Tom Jenkins, and Newsletter Editor Tim Brown. The first official meeting was held on Thursday April 17, 2014 at 5:30 p.m. at Mendenhall Laboratories, Room 291. As a group, we need to provide interaction that is of value to the student sections.

The Ohio Section May Meeting and Dinner Presentation will take place on May 22<sup>nd</sup> at La Scala Restaurant in Dublin. The featured speaker will be Dr. Chad Hammerschmidt of WSU. He will be speaking on "*Unintended consequences: Phosphorus and Alum in Grand Lake St. Mary's, Ohio*". I look forward to seeing you there.

The Executive Committee is planning a fun night out with the Columbus Clippers game on July 26, 2014. This will be a great opportunity to get to know your fellow members in an informal setting, and bring the family out to the ballpark.

The Ohio Geological Society and the Ohio Geological Survey are sponsoring a short course on "Depositional systems and hydrocarbon potential of the Upper Devonian Ohio black shales, as interpreted from core and geophysical logs from northern Ohio" will be held on May 30, 2014 at the H.R. Collins Core Laboratory, Delaware, Ohio. A flyer describing course content is included in this Newsletter. Please make plans to attend this unique opportunity to study Ohio's black shales. All of the proceeds from the event will go to supporting the Ohio Geological Survey.

As many of you may have noticed, the Ohio Section is continuing to improve the website to make it more user friendly to the membership, should you have any questions or comments please feel free to contact any member of the executive committee and express your view on how to improve the website. •

#### Ohio Section May Meeting and Dinner Presentation

Feature Topic: Unintended Consequences: Phosphorus and

Alum in Grand Lake St. Marys, Ohio

Presented by: Dr. Chad Hammerschmidt

You are cordially invited to the AIPG Ohio Section's May Meeting and Dinner presentation, which will take place at La Scala in Dublin on Thursday, May 22<sup>nd</sup>. The Section is pleased to host Wright State University professor Dr. Chad Hammerschmidt, who will be presenting: *Unintended Consequences: Phosphorus and Alum in Grand Lake St. Marys, Ohio.* 

The event begins at 5:00 pm with social hour, followed by dinner at 6:00, and the feature presentation at 7:00. Please RSVP to President-Elect Tom Jenkins at tienkins@eagon.cc.

Unintended Consequences: Phosphorus and Alum in Grand Lake St. Marys, Ohio

by Dr. Chad Hammerschmidt

#### **ABSTRACT**

Grand Lake St. Marys was constructed in the 1840s to serve as a reservoir for the Miami and Erie Canal. Since then, but particularly during the past three decades, water quality in the lake has been deteriorated by inputs of phosphorus, which have resulted in toxic blooms of cyanobacteria. Our research shows that over 80% of the current-day phosphorus loadings to the lake are in watershed runoff that can be attributed mostly to agricultural operations. The remedy to eutrophication of Grand Lake is cessation of watershed inputs of phosphorus. In contrast, the State applied about two million pounds of alum (aluminum sulfate) to the lake in 2011 in an attempt to remove phosphorus from the water column and ameliorate fluxes from sediments. We found that the alum had no effect on phosphorus levels in lake water and that the aluminum and sulfate may negatively alter benthic communities.

#### **PRESENTER**

Dr. Chad Hammerschmidt is an associate professor of Earth & Environmental Sciences at Wright State University, where he teaches aquatic geochemistry, oceanography, and scientific communication. His research focuses on developing a quantitative understanding of the biological, chemical, and physical mechanisms and processes that affect the transport, transformation, and fate of trace metals and nutrients in marine and freshwater systems. •



The AIPG Ohio Section is organizing an outing at the Columbus Clippers game on July 26<sup>th</sup>. Don't miss this chance to get to know your fellow section members in an informal setting and catch some of central Ohio's best baseball action! Friends and family are encouraged to attend. Game ticket incentives will be offered for AIPG members – details on these incentives will be announced shortly.

Game Info: Columbus Clippers vs. Norfolk Tides

Saturday, July 26, 2014 at 7:05 pm Fireworks display following the game!



#### Ohio Section March Meeting and Dinner Presentation Revisited

The initial AIPG Ohio Section meeting and dinner presentation of 2014 took place at La Scala Italian Bistro in Dublin on March 13, and was an enjoyable event for all attendees. The Section was pleased to host one of its own, Martin (Mort) Schmidt, who presented, *An Innovative Approach for Locating VOC Sources and Evaluating Vapor Intrusion*.

#### Presentation of Meeting Agenda and Opening Remarks

At the conclusion of social hour, **President Curtis Coe** called the meeting to order and welcomed fellow members and guests. President Coe promoted the upcoming 5<sup>th</sup> Annual AIPG Conference on the Marcellus, Utica, and Point Pleasant Shale, taking place in Columbus on April 16 and 17, 2014. Curt gave an update on AIPG student chapter activity, noting the very active chapter at Wright State University (WSU), and the upcoming reactivation of the Ohio State University (OSU) chapter. These accomplishments are largely the result of the efforts of Student Chapters Chair Robin Roth. Curt noted how these student chapters are vital to the future of the Section, and that the membership can be helpful in promoting the Section to area colleges and universities. Another goal of the organization is to reshape and rethink the problem of low membership of university professors. President Coe recognized the efforts of Laura Finney. Ms. Finney is a 5<sup>th</sup> grade earth science teacher at Chamberlin Hill Intermediate School in Findlay who is the 2014 recipient of the AGI Award for Excellence in K-8 Earth Science Teaching. The Ohio Section has sent Ms. Finney a letter of recognition (see page 20 of this newsletter).

President Coe stressed the importance for the membership to be active, noting that the Executive Committee meetings are open-door and the membership is welcome to attend and participate. It is the responsibility of all members to contribute in some form to the organization, from mentoring students as new members to stepping up at some point to be Section president.

Curt discussed the Ohio Section website, and its importance to the future and growth of the Section. The website must become the chief mode of communication and source of information for the Section, and to this point it has been underused. Dinner meeting and Executive Committee meeting dates are posted on the website for all to attend. Newsletters are now posted directly on the website rather than distributing them by e-mail. President Coe promoted the website blog, and suggested to the membership that if they have something of interest – the blog is the place to start. It is for this reason that Section website webmaster Carol Swinehart has become increasingly involved in improving the website. President Coe

promoted membership interaction with Carol, and she was introduced, having prepared a presentation on the website for the group.

#### **Website Presentation by Carol Swinehart**

Carol's presentation included a discussion of each page of the website. The *Home* page states the goals of the AIPG Ohio Section, the benefits of membership, and contains a link to join. Visitors to the *Home* page can also view the Section's strategic plan, the Section's mission, view additional information on membership, and "ask a geologist". Other pages on the website include: *Contact* – to reach AIPG Ohio Section be e-mail or mail; *Officers* – lists officers and committee chairman and provides phone numbers; *Newsletters* – includes links to newsletters, annual reports, Executive Committee meeting minutes, and papers; *Links* – providing geological links of interest; and *Blog*, including a wide variety of topics. Members can contact Carol Swinehart or Brent Smith for any questions or comments on the website.



Ohio Section website webmaster Carol Swinehart discussing features of the website.

**President-Elect Tom Jenkins** then introduced the featured presenter, Mort Schmidt.

#### **Dinner Presentation by Martin (Mort) A. Schmidt, CPG-08432**

The dinner presentation was delivered by Mort Schmidt, currently Practice Leader for vapor intrusion for Cox-Colvin, & Associates in Plain City, Ohio, and included a timely discussion of subslab soil-gas sampling techniques and their application to the rapidly growing field of vapor intrusion. Mort explained how sub-slab soil gas sampling can be utilized as a method for locating previously unknown and unsuspected sources of contamination.

Large facilities can be evaluated over a two-day period by two field personnel using hand-held equipment. The process includes the installation of dozens of sample points in a single day, and the collection of samples and sealing of the points on the following day. Because of the speed and simplicity of this approach, one can thoroughly evaluate large facilities and properly address the issue of spatial heterogeneity.

Schmidt explained that the migration of vapor contamination from deep sources, typically groundwater, is highly variable. The decline in vapor concentration during migration depends on heavily on soil properties, including soil moisture, grain size, and carbon content; and to a lesser degree on contaminant and soil-gas chemistry. The relative lack of geologic complications therefore makes sub-slab soil gas the best tool for predicting vapor intrusion to indoor air. Several case studies were presented, including sites in Ohio, Chicago, and Iowa.



President-Elect Tom Jenkins about to present speaker Mort Schmidt with an engraved desktop item to convey the Ohio Section's appreciation.

Schmidt received his B.S. and M.S. degrees in Geology from the Ohio State University. He has served as an exploration geologist for Shell Oil, a radon investigator for the Ohio EPA, and for more than twenty years, as an environmental geologist. Mort is currently Practice Leader for vapor intrusion for Cox-Colvin, & Associates in Plain City, Ohio. He has made presentations and taught classes on vapor intrusion at conferences including the AWMA, the Ohio Brownfields Conference, the West Virginia Brownfields Conference, and the AIPG National Meeting. •

5<sup>th</sup> Annual AIPG Conference Marcellus, Utica, and Point Pleasant Shale: Energy Development and Enhancement by Hydraulic Fracturing

Contributed by: President Curtis J. Coe, CPG-06240

The 5<sup>th</sup> Annual AIPG Conference on Marcellus, Utica, and Point Pleasant Shale, focusing on the topic of energy development and enhancement by hydraulic fracturing, was held on April 16 and 17, 2014 at the Holiday Inn in downtown Columbus, Ohio. Ohio Section President Curtis Coe and several members of the Executive Committee attended the meeting. The Ohio Section assisted with providing moderators for each of the conference sessions.



The conference was a great success thanks to the hard work by Cathy Duran and Wendy Davidson of AIPG National Headquarters in Thornton, Colorado. All that attended the meeting left with a better understanding of how society in general can benefit from shale gas development in Ohio. The keynote speaker was Peter McKenzie, CPG. Peter is VP of Operations, with the Ohio Oil and Gas Association (OOGA). He spoke to the group on Ohio's Energy Renaissance. His talk

was very insightful. He covered the history of oil and gas development in Ohio up to and including the Marcellus, Utica, Point Pleasant shale developments. He then went into an in depth discussion of the economic behind drilling and operation of a shale gas wells In addition, all that attended were treated to talks that covered all aspect of the shale play development from exploration, drilling, and environmental protection.





The Ohio Section also had a booth at the conference again this year. The ODNR again allowed the Ohio Section to represent the Ohio Geologic Survey, Division of Oil and Gas and the Division of Soil and Water. The conference was a great chance to meet old friends, make new fields and to network with other professionals that are working to supplies support services to the oil and gas industry.

A list of presenters can be found on the AIPG National Site. •



# Spring Field Trip to Caesar Creek State Park Hosted by AIPG Student Chapter of Wright State University

Contributed by: Greg Geise, SA-3812, Wright State University

The AIPG Student Chapter of Wright State University (WSU) organized and led a field trip at Caesar Creek State Park on April 5, 2014. The event was open to all AIPG members and their friends and family. There were thirteen in attendance including WSU AIPG student members, faculty and their family, as well as several AIPG Ohio Section members. The weather cooperated as the sunny but cool conditions provided a pleasant setting for scavenging Ordovician-aged fossils from the park's emergency spillway.



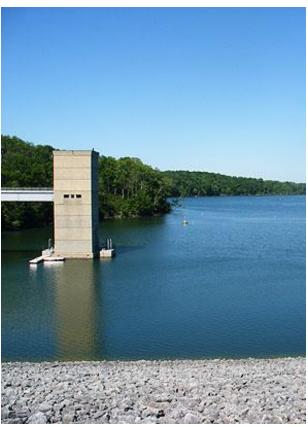
The outing commenced at the Army Corps of Engineers Visitor Center, where attendees enjoyed coffee while socializing. When everyone had arrived, the group took a tour of the Visitor Center, which offers a wide variety of displays and presentations covering an array of topics including fossils, wildlife, and construction of the dam. Prior to venturing out, the group convened in the center's theater where WSU professor Dr. David Schmidt gave a short presentation titled: *An introduction to the paleontology and stratigraphy of Caesar's Creek State Park*. WSU student member and U.S. Army Corps of Engineers Park Ranger Randall Mickle then discussed the historical and operational aspects of the dam.



Wright State
University Professor
Dr. David Schmidt
presenting: An
introduction to the
paleontology and
stratigraphy of
Caesar's Creek State
Park, to field trip
attendees in the Army
Corps of Engineers
Visitor Center.

The group then visited the control tower for the Caesar Creek Dam where Park Ranger Mickle led a tour. Mickle explained that from within the tower, U.S. Army Corps of Engineers personnel can control the volume of water that discharges from the lake into the Little Miami River. During the fall and winter months, the lake level is lowered to prepare for the storage of heavy spring rainfall. In the event of heavy rainfall, surface water runoff is stored in the lake until the swollen streams and rivers below the dam have receded. The extra water is then released when it is determined that these waterways can handle the stored water.





LEFT – The group embarking toward the Caesar Creek Lake dam control tower. RIGHT – View of dam control tower from Clarksville Road.

The group returned to the Visitor Center for lunch before embarking on the main event: fossil hunting in the park's emergency spillway for Caesar Creek Dam. The tri-state region of southwestern Ohio, southeastern Indiana, and north-central Kentucky is world renowned for the abundance and preservation of Upper Ordovician marine fossils, and the emergency spillway at Caesar Creek State Park has become a well-known fossil collecting locality for geologists as well as the general public. While natural rock exposures are abundant in the area of the park, it is a manmade exposure – the excavation of the emergency spillway, which has brought recognition to the park as a fossil collecting destination that continues to be visited on an annual basis by organizations such as the Smithsonian and the American Museum of Natural History.



Typical view of the broad, flat emergency spillway consisting of an exposed limestone bed surface littered with complete and fragmented Ordovician fossils.

Common fossils found at the spillway include varieties of sponges, corals, bryozoans, brachiopods, mollusks (including gastropods, bivalves, and cephalopods), echinoderms (crinoids), arthropods (trilobites), graptolites, and trace fossils. In general, finding a trilobite seemed to be a challenge for the group, with the exception of WSU student Desiree Nichols who found a complete enrolled trilobite, as shown in the accompanying photograph.



Small, enrolled trilobite found by WSU student Desiree Nichols.



Participants of the 2014 Caesar's Creek trip: (Left to Right) Greg Geise, John Ernst, Dr. Stacey Hundley and her daughter, Allison, Ken Saville, Desiree Nichols, Ashlynn Boedecker, Tim Brown, Tom Jenkins, Dr. David Schmidt, Adam West. Photographed by Robin Roth. Randy Mickle was not pictured as he was performing his ranger duties at the time this photo was taken.

In conclusion, from the perspective of the WSU AIPG Student Chapter, we have held a long-standing interest in hosting an AIPG event at Caesar Creek because student member Randy Mickle has been employed with the Army Corps of Engineers since July 2012 and has special access to non-public areas of the park, such as the dam control tower. The organization of the trip fell heavily on Randy because of his familiarity of the park, and major duties and tasks included setting a date and time for the outing, creating a list of activities, and deciding how to provide lunch, were completed collectively during several chapter planning meetings. In common with the previous experience of planning the 2013 Hocking Hills trip, the most difficult task was recruiting participants. Coursework activities at WSU, and also at Ohio State University where some students had expressed interest, may have conflicted with the timing of the trip. Overall, the value of these trips lies not only in our interaction with nature but in the bonds created between fellow geologists, both students and professionals.

**Editor's Note** – On behalf of the Executive Committee I would like to thank the WSU AIPG Student Chapter for their planning and organization of the trip. I would especially like to recognize Randy Mickle for his efforts in making the event happen, including providing coffee, donuts, and subs for the group and providing handouts. •

## Welcome Back Buckeyes! - AIPG Student Chapter at The Ohio State University Reactivated

Contributed by: Robin E. Roth, CPG-09264

**AIPG Ohio Section Student Chapter Committee Chair** 

The Ohio Section of AIPG is pleased to welcome back the reactivated Student Chapter at The Ohio State University (OSU). On April 10, 2014, the Executive Committee of the Ohio Section of AIPG approved and endorsed the Bylaws drafted by the students and pledged the support of the Ohio Section. The National AIPG Executive Committee in their April 24, 2014 letter also welcomes these students and graciously contributed \$100 to assist the reactivated Student Chapter treasury.

The AIPG Student Chapter at OSU was originally chartered on November 19, 2004, as witnessed by Robert G. Corbett, CPG, National AIPG President 2004 and William J. Siok, CPG-04773, Executive Director. The Chapter/Faculty Sponsor was Thomas M. Berg, CPG-08208 and then Ohio Section President, Constance J. Livchak, CPG-09568, and Secretary John M. DiNunzio CPG-09244 also signed the original endorsement and petition. The AIPG Student Chapter Officers were President Aaron Kahn, Vice President Matt Williams, Secretary April Jacobs and Treasurer Jeff Fox. In 2008 and 2009, there was a burst of student chapter activity when Dr. Lindsay Schoenbohm was the Faculty Sponsor. Unfortunately, after Dr. Schoenbohm left the Department, the student chapter became dormant.

The catalyst for re-activation of the AIPG Student Chapter at OSU was two students who attended the Ohio Section's 2013 Annual Banquet Meeting. On February 13, 2014, an initial meeting with five enthusiastic students, Alyssa Ferraro, Andrew Collins, Brian Vargo, Jake Harrington and Sean O'Brien, and one willing staff advisor, Karen L. Royce, Ph.D., Academic Counselor and Staff Assistant, was held with Curtis Coe CPG-06240, Ohio Section President, and Robin Roth CPG-9264, Ohio Section, Student-Chapter Committee Chair, to discuss the process for re-activating the student chapter. Following this meeting, several students and their Undergraduate Student Advisor attended OSU student activity group training.

On March 20, 2014, an introductory meeting was held in OSU's Mendenhall Laboratories. Tom Jenkins CPG-7892, Ohio Section President-Elect and Past President, Tim Brown CPG-11637, Ohio Section Newsletter Editor and Robin Roth joined some 25 students and their staff advisor and presented "The What and Whys of Re-Activating OSU's Student Chapter Charter." The presentation explained the role of AIPG, the Ohio Section's mission through its goals and activities, the benefits of becoming a student member, and opportunities for the student chapter.

The 2014 AIPG Student Chapter OSU Officers President Alyssa Ferraro, Vice President Andrew Collins and Treasurer Brian Vargo, and their Student Advisor, Karen L. Royce, worked with assistance from Vicki L. Hill, AIPG Membership Services Manager and Robin Roth to draft the Constitution and Bylaws and associated documents. Alyssa Ferraro attend the April 10, 2014, Executive Committee Meeting of the Ohio Section and helped to present the Endorsement and Petition for re-activation of the AIPG Student Chapter at OSU. The final meeting of the semester was held on April 17, 2014, with a board game theme.

We look forward to the student's regular participation in Ohio Section meetings and events. Through coordination with the re-activated Student Chapter, our September Ohio Section meeting will be held at OSU's Orton Hall (155 South Oval Mall, Columbus) with a special tour of the Orton Geological Museum, and our annual meeting in November will be held at OSU's Faculty Club which is located immediately west of Orton Hall. •

Calendar of Upcoming Events		
MAY 22	Ohio Section AIPG May Meeting and Dinner Presentation – <i>Unintended Consequences: Phosphorus and Alum in Grand Lake St. Marys, Ohio</i> , by Dr. Chad Hammerschmidt, Wright State University. <a href="www.aipg-ohio.org">www.aipg-ohio.org</a>	
MAY 23	Ohio Geological Society Lunch Meeting – <i>More Informed Drilling and Completions Through Advanced Cuttings Analysis at Wellsite</i> , by R. Ryan King, ALS Empirica. <a href="www.ohgeosoc.org">www.ohgeosoc.org</a>	
MAY 30	OGS/ODNR Workshop – Depositional Systems and Hydrocarbon Potential of the Upper Devonian Ohio Black Shales, H.R. Collins Lab and Core Repository, Delaware, Ohio. <a href="http://geosurvey.ohiodnr.gov">http://geosurvey.ohiodnr.gov</a>	
JULY 26	Ohio Section AIPG - Night Out with the Columbus Clippers. www.aipg-ohio.org	
AUGUST 4-5	OGS/ODNR Workshop – Depositional Systems and Hydrocarbon Potential of the Upper Devonian Ohio Black Shales, H.R. Collins Lab and Core Repository, Delaware, Ohio. <a href="http://geosurvey.ohiodnr.gov">http://geosurvey.ohiodnr.gov</a>	
AUGUST 28	Ohio Section AIPG Executive Committee Meeting, www.aipg-ohio.org	
SEPTEMBER 13	AIPG National Meeting, Prescott, Arizona, www.aipg-ohio.org	
SEPTEMBER 18	Ohio Geological Society Golf Outing – Chapel Hill Golf Course, Mount Vernon, Ohio. <a href="https://www.chapelhillgolfcourse.com">www.chapelhillgolfcourse.com</a>	
SEPTEMBER 25	Ohio Section AIPG September Meeting and Dinner Presentation at Orton Hall, The Ohio State University – topic to be announced, <a href="https://www.aipg-ohio.org">www.aipg-ohio.org</a>	
SEPTEMBER 27-30	42 <sup>nd</sup> Annual Eastern Section AAPG Meeting – London, Ontario, Canada, <a href="https://www.esaapg2014.org">www.esaapg2014.org</a>	
OCTOBER 24	Ohio Section AIPG Executive Committee Meeting, www.aipg-ohio.org	
NOVEMBER 20	Ohio Section AIPG Annual Meeting and Dinner Presentation at the Faculty Club, The Ohio State University – topic to be announced, <a href="https://www.aipg-ohio.org">www.aipg-ohio.org</a>	
DECEMBER 2-4	2014 Oilfield Expo – International Exhibition Center, Cleveland, Ohio. <a href="https://www.ooga.org">www.ooga.org</a>	
MARCH 11-13	2015 OOGA Winter Meeting – at the Hilton Columbus at Easton, Columbus, Ohio. <a href="https://www.ooga.org">www.ooga.org</a>	

## ODNR Announces Stronger Permit Conditions for Drilling Activities Near Faults and Areas of Seismic Activity

On April 11, 2014, Ohio Department of Natural Resources (ODNR) Director James Zehringer announced new, stronger permit conditions for drilling near faults or areas of past seismic activity. The new policies are in response to recent seismic events in Poland Township (Mahoning County) that show a probable connection to hydraulic fracturing near a previously unknown microfault.

New permits issued by ODNR for horizontal drilling within 3 miles of a known fault or area of seismic activity greater than a 2.0 magnitude would require companies to install sensitive seismic monitors. If those monitors detect a seismic event in excess of 1.0 magnitude, activities would pause while the cause is investigated. If the investigation reveals a probable connection to the hydraulic fracturing process, all well completion operations will be suspended. ODNR will develop new criteria and permit conditions for new applications in light of this change in policy. The department will also review previously issued permits that have not been drilled.

"While we can never be 100 percent sure that drilling activities are connected to a seismic event, caution dictates that we take these new steps to protect human health, safety and the environment," said Zehringer. "Not only will this reasonable course of action help to ensure public health and safety but it will also help us to expand our underground maps and provide more information about all types of seismicity in Ohio."

"ODNR's directives are a sensible response to a serious issue that regulators across the country are closely examining," said Gerry Baker, Associate Executive Director of the Interstate Oil and Gas Compact Commission. "IOGCC is pleased to work with Ohio and other states to share scientific data to better understand the nature of these occurrences."

"These additional standards add even more strength to Ohio's already comprehensive regulatory program," said Mike Paque, Executive Director of the Groundwater Protection Council. "State regulators are taking an aggressive lead in tackling tough and complicated oil and gas issues and ODNR is no exception."

More than 800 wells have been drilled in Ohio's Utica and Marcellus shale play, including as many as 16,000 hydraulic fracturing stages from those wells. Regarding the seismic events in Poland Township, Mahoning County, ODNR geologists believe the sand and water injected into the well during the hydraulic fracturing process may have increased pressure on an unknown microfault in the area. Further hydraulic fracturing at the site is suspended but the company will be permitted to recover resources from five of the previously drilled wells located on the pad. This is also expected to have the beneficial effect of reducing underground pressure and decreasing the likelihood of another seismic event.

Under ODNR's lead, Ohio has joined a consortium of state regulators dedicated to learning more about seismic activity, especially as it relates to oil and gas activity. The members of this consortium are currently working with the Interstate Oil and Gas Compact Commission and Groundwater Protection Council to share information and knowledge. The working group also hopes to draw upon current and future research to develop common procedures for how to monitor for seismic activity and respond if activity occurs.

The Ohio Seismic Network, coordinated by ODNR and operated by various partners, began recording seismic events in 1999. Before that time, the recording of seismic events varied from distant machines and felt reports. Ohio has a history of seismic activity, and since the network has established, Ohio has experienced 109 events greater than 2.0 magnitude. Data from the Ohio Seismic Network will be used as part of our new application review process.

A map of underground seismic faults and past seismic events is available as a PDF document oilandgas.ohiodnr.gov/portals/pdf/EG-2 2014 MAPONLY.pdf, and as a geographic information system Shape File <a href="http://www.dnr.state.oh.us/geodata/Statewide/Earthquake">http://www.dnr.state.oh.us/geodata/Statewide/Earthquake</a> shapes.exe.

#### 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.

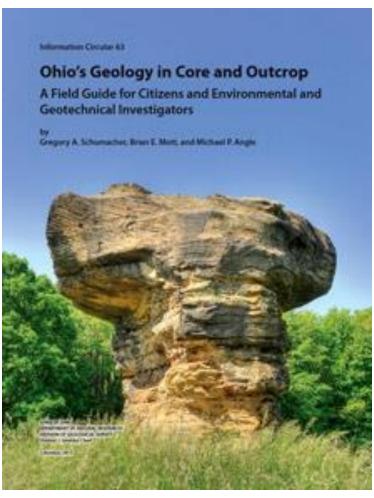
- Scientific interpretations should include accurate and effective references.
- Opinion pieces should be presented with reasoning. Fellow members may choose to comment or challenge a submittal with their own contribution.
- Authors must abide by the AIPG Code of Ethics. Any author who violates this 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.
- Member authors should provide their name and certification number. 5.
- 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 tbrown@hullinc.com.

## Ohio Division of Geological Survey Releases New Publication Information Circular 63: Ohio's Geology in Core and Outcrop

*Ohio's Geology in Core and Outcrop* written by Gregory A. Schumacher, Brian E. Mott, and Michael P. Angle, is a 191-page field guide for citizens and environmental investigators.

Written for a wide audience-from students and amateur geologists to experienced geoscience engineering professionals-IC 63 details the state's surficial deposits and nearsurface bedrock units. Spiral-bound and printed on waterproof paper using waterproof inks, IC 63 is designed for use both indoors and in the field. The field guide provides а succinct summary of the geology of Ohio through an introductory section and 65 fact sheets that describe 111 surficial and bedrock units. Α thorough introduction explains geologic time, Ohio's surficial and near-surface geology, the history of Ohio's nearsurface bedrock geology, and Survey map products and how to use them. Each of the 65 facts sheets describes the geologic. engineering, and hydrogeologic properties of Ohio's rocks. The fact sheets are enhanced



with full-color photographs, diagrams, and maps, providing detailed views of the diagnostic features of Ohio's near-surface geologic units in both natural and man-made exposures as well as in core drilled through these geologic units.

The publication is available in printed format (\$30.00) or as a CD-ROM (\$25.00) from the Survey's Geologic Records Center at (614) 265-6576 or at <a href="mailto:geo.survey@dnr.state.oh.us">geo.survey@dnr.state.oh.us</a>. Also, it may be ordered through the Survey's online store at <a href="https://www.OhioGeologyStore.com">www.OhioGeologyStore.com</a>". •

#### **Ohio Section Awards Committee Seeks 2014 Nominations**

It's not too early to begin considering potential Awards recipients to be presented at the Ohio Section Annual Meeting in November. Please submit nominations to Awards Committee Chairman, Curtis J. Coe via e-mail at <a href="mailto:Curtis.Coe@dnr.state.oh.us">Curtis.Coe@dnr.state.oh.us</a>.

Award categories and criteria area include the following:

AWARD OF HONOR	The <b>Award of Honor</b> is presented to individuals that have a demonstrated record for distinguished service, as acknowledged by receipt of two of the available awards.
OUTSTANDING PUBLIC SERVICE	The Outstanding Public Service Award is presented to those individuals that have made outstanding contributions to the public health and welfare during their career through:  • Expert testimony to governmental units  • Distinguished service on governmental commissions and committees  • Geological expertise where needed by the public at large
OUTSTANDING SERVICE TO THE PROFESSION	The Outstanding Service to the Profession Award is presented to those individuals that have given to the profession by a:  • Long record of service • Improvement of the profession as an articulate and effective advocate • Emphasis on the profession/public interface
OUTSTANDING SERVICE TO THE INSTITUTE	The <b>Outstanding Service to the Institute Award</b> is presented to those individuals that have made outstanding contributions of time and effort to the Ohio Section – AIPG
CERTIFICATE OF MERIT	This certificate is presented to individuals who have demonstrated meritorious or unusual service to the president of the Ohio Section. Nominations are made by the Ohio Section President.
OUTSTANDING ACHIEVEMENT AWARD	This award is presented to those individuals who have made an outstanding geologically related contribution to either the geologic profession or the general public. This award is open to individuals inclusive of:  • Government  • Other professions  • Other Scientists  • Academicians and  • Media Professionals

#### AIPG Ohio Section

P.O. Box 340012, Columbus, Ohio 43234

March 11, 2014

Ms. Laura Finney Chamberlin Hill Intermediate School Grade 5 600 W. Yates Findlay, Ohio 45840

Dear Ms. Finney:

The American Institute of Professional Geologist (AIPG) is a nationwide organization of more than 7,000 members, with over 300 professional geologists in the Ohio Section. AIPG is the largest association dedicated to promoting geology as a profession. Recently, the Ohio Section has become aware of your upcoming confirmation of the AGI Award for Excellence in K-8 Earth Science Teaching during the National Science Teachers Association 2014 National Conference in Boston. Bestowment of this award is recognized by professional geologists throughout AIPG as a significant achievement and contribution to the profession.

On behalf of the AIPG Ohio Section members, I would like to congratulate you on receiving this prestigious award and thank you for all of your efforts in helping prepare future generations of earth scientists.

As practicing geologists, we want you to know how much we appreciate your efforts to bring a passion for the earth sciences to young students, especially in Ohio. It is only through instilling the basic knowledge and desire to learn more about our earth by teachers like you that insures the geological profession will continue to contribute to the health, wealth, and prosperity of the nation. We need future generations of young professionals with geological knowledge to discover and manage the earth's natural resources while continuing to protect the environment. It is through your efforts of basic instruction, encouragement and guidance that many students will be ready for advance education, skills development, and the passion necessary to deal with the challenges for wise management of the earth natural resources that future generations will face.

Again, our since thank you and congratulations. We wish you the best success in future endeavors.

Sincerely,

Curtis J Coe, CPG, PG President of the Ohio Section of AIPG 2014

# The Ohio Geological Society and the

### **ODNR Division of Geological Survey**

present a core workshop

# Depositional systems and hydrocarbon potential of the Upper Devonian Ohio black shales

as interpreted from core and geophysical logs from northern Ohio

#### Instructors:

Brian Currie, Mac Swinford, Joe Hannibal, John Wicks, Mike Angle and Brian Mott

May 30, 2014 at the H. R. Collins Core Laboratory Delaware, Ohio

Registration Fee (includes continental breakfast and lunch)

\$195 (prior to May 23) \$250 (after May 23)

For additional information visit:

http://geosurvey.ohiodnr.gov/news-events/upcoming-events or email macswinford@gmail.com

## Depositional systems and hydrocarbon potential of the Upper Devonian Ohio black shales as interpreted from core and geophysical logs from northern Ohio

The Ohio Geological Society, Ohio DNR Division of Geological Survey, in cooperation with Miami University, the Cleveland Museum of Natural History and DLZ-Ohio, Inc., will host a core workshop focused on Upper Devonian shales of northern Ohio. Workshop participants will learn techniques to document the lithological characteristics of shale-rich stratigraphic intervals and interpret their environments of deposition. Participants will also learn about the relationships between lithology, organic content, and geophysical-log signature, and how these components are used in regional sequence stratigraphic correlations and predicting the hydrocarbon potential of shale reservoirs in the northern Appalachian Basin. Workshop activities will consist of background lectures on the Devonian regional tectonic setting and stratigraphy of the basin, as well as an overview of core logging and evaluation techniques. Participants will work in small groups to log select intervals of Upper Devonian cores from northern Ohio, and complete exercises focused on identifying key sequence stratigraphic horizons and identifying zones of potential hydrocarbon resources based on lithologic characteristics, log-signature, and organic geochemical data. The workshop will conclude with an optional field trip to local Devonian shale outcrops.

**Who should attend:** Entry level geoscientists with a desire to learn techniques for describing cored shale intervals, correlating to geophysical logs, and using this knowledge to interpret depositional environments, and hydrocarbon potential.

Location: H. R. Collins Lab and Core Repository, Alum Creek State Park

3307 South Old State Road Delaware, Ohio 43015-7635

#### Schedule:

7:30 AM	Registration and Introductions (donuts & coffee provided)
8:00 AM	Lecture: Devonian tectonic setting and stratigraphy of the northern Appalachian Basin; Core logging and evaluation methods; Relationships between lithology, geophysical-log signature, and sequence stratigraphy.
9:00 AM	Core logging and description exercise
12:00 PM	Discussion of morning group core logging exercise (lunch provided)
1:00 PM	Core logging and description exercise
4:00 PM	Discussion of afternoon group core logging exercise; Synthesis of core lithological descriptions, log signature, and hydrocarbon potential.
5:30 PM	Optional visit to local Devonian shale outcrops (weather permitting)

# Depositional Systems and Hydrocarbon Potential of the Upper Devonian Ohio Black Shales

#### as Interpreted from Core and Geophysical Logs from Northern Ohio

ODNR Division of Geological Survey
H. R. Collins Lab and Core Repository
Alum Creek State Park
3307 South Old State Road
Delaware, Ohio 43015-7635

#### Friday May 30, 2014

(REGISTRATION, PLEASE PRINT) Full Name (to appear on name badge):			
Organization:			
Title:			
Business Address:			
City:	State:	Zip:	
Business Phone:			
E-mail:			

Workshop participants will earn 10.0 Professional Development Hours.

Registration Fee (includes continental breakfast and lunch):

Before May 23, 2014 ......**\$195**After May 23, 2014 .....**\$250** 

Make check or money order payable to:

#### **Ohio Geological Society**

Send check and registration form to Ohio Geological Society, PO Box 14304, Columbus, OH 43214

PayPal account holders may send payment to payogs@ohiogeosoc.org. Please provide the above personal information in the PayPal payment memo field. Sorry, we have no other method to accept credit card payments.



#### For more Information



#### **Ohio Geological Society**

2014 Application For Scholarship for Member's Children

#### **Instruction Page**

The Ohio Geological Society (OGS) is sponsoring three Scholarships for the coming academic year, one for \$1,500.00 and two for \$1,000.00 each, to be awarded to children or grandchildren of members of the OGS. The awards will be determined by the OGS Scholarship Committee and announced at the May 20, 2014 meeting. The award will be paid directly to the student, not to the educational institution. This is a one year award, and will not be automatically renewed, however, the student may apply for any subsequent year's OGS Scholarship(s) as they are announced.

#### **Eligibility Requirements**

Any scholarship awarded by the Ohio Geological Society is contingent upon the following conditions. The successful candidates must be accepted at or enrolled in a full time undergraduate studies program at an accredited College or University for the 2014-2015 year. They must be the biological or adopted children or grandchildren of current OGS members who have been a member for at least 5 of the previous ten years. To be considered for the award, applications must be complete and meet the conditions as specified within this application, including all of the information on the Identification/Qualification page.

#### Confidentiality

All information requested and provided in this application will be kept strictly confidential, and not shared with anyone outside the Scholarship Committee process for any other purposes. The Application process includes a step to insure the anonymity of the applicant during the evaluation by the Committee.

A valid Application includes all of the following:

A completed Identification/Qualification Information page

Completion of the Evaluation Information pages by both Applicant and Sponsoring Member

Essay submission

Letter of Recommendation

Copies of requested test and/or and grade information

Please type or print all information. If additional space is needed, attach supplementary pages.

The Letter of Recommendation should be from your High School Advisor (or one of your High School Science Teachers) for a High School Senior, or a Letter of Recommendation from one of your College Science Professors or Instructors, if already in college.

For the following information, please enclose a copy of the following with the application:

An official transcript from your High School, If not already attending college, **OR** The most recently available grade report (transcript) if already in college.

Score and percentile for ACT or SAT.

This years (2014-2015) Essay Topic is:

Should the US Federal Government attempt to mandate that a certain percentage of the US automobile fleet be fueled by Natural Gas in the near future (like the government of California has attempted to do with electric powered vehicles)? Yes or no, with a brief supporting discussion.

This essay should be limited to a maximum of 350 words.

Applications must be submitted by mail or in person to Marty Shumway, OGS Treasurer. It must be received no later than April 25, 2014.

Send completed application to: Marty Shumway

The Ohio Geological Society

P.O. Box 14304 Columbus, OH 43214

#### Identification/Qualification Information

## **Student Applicant's Information** Name \_\_\_\_\_ Home address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_ Zip \_\_\_\_\_ E-mail address Phone(s) Cell \_\_\_\_\_ Land line \_\_\_\_\_ Date Signature of Applicant Parent, Grandparent or Guardian Information referred to as Sponsoring Member (To be completed by sponsoring Ohio Geological Society member) Home address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_ Zip \_\_\_\_ E-mail address \_\_\_\_ Phone(s) Cell \_\_\_\_\_ Land line \_\_\_\_ Relationship to Applicant \_\_\_\_\_\_ Number of years as a member \_\_\_\_\_ Employer

Date

Signature of OGS Member

#### **Evaluation Information**

#### **Applicant Information**

-	·	lete this section even if you a	·	-
Name and P	osition/title of High	School Counselor or Teacher	providing letter of reco	mmendation:
		Position	/title	
High School			High School (	Graduation Year
Class standi	ng out of	students High School G	Grade Point Average	Out of max GPA
ACT Score _	ACT Percentile	e SAT Score SA	T Percentile Verb	al Percentile
			Math	Percentile
	ember of any acade ilon, AAPG, SEPM,	mic or professional organizat etc)	ions or societies? (Nati	onal Honor Society, Sigma
Other activiti	es (sports, band, pa	articipation in school organiza	tions, volunteer activitie	es, church, scouts, etc.)
Name of Col	lege where accepte	d, or currently attending	College Ma	ajor(s), Minor(s)
		llege Grade Point Average	Out of GPA	
-		full scholarships for the comi		
Do you curre	ently have any stude	ent or educational loans?	Amount	
How much d	o you personally pla	an to contribute to your colleg	e expenses? (\$ or perc	centage)
Lietioh(e) vo	ou have held (full an ork) and organization	d part time) Include any Co-on name.	op or paid internship po	sitions (alternate quarters o
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Employer	Address	Duties/Position	Dates	Hrs / Wk
Sponsoring	Member Information			
Sponsoring M	lember's OGS history	Number of yea	rs as a member	
		offices held, Committee part vities as a recognized repre		

## Special Offers For AIPG

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Financial Credit Union

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# **EARN \$100**

When you open a new Premier Checking Account with direct deposit of your paycheck.

Coupon valid through May 31, 2014. Coupon must be presented at time of application. \$100

bonus for checking account deposited after the checking account has been open for 6 months.

Member must have monthly direct deposit of at least \$200.

# **EARN UP TO \$500**

Get up to \$500 in cash when you transfer an auto loan from another financial institution. Plus, no payments for 90 days!

Coupon valid through May 31, 2014. Coupon must be presented at time of application. Loan subject to credit approval. Existing Pathways loans not eligible. For cash back offer: minimum loan amount \$3,000, maximum cash back \$500.

### LIMITED PARTICIPATION 4-MONTH CERTIFICATE

For members with a Premier Checking Account and direct deposit.

4.00% APY\*

\*Annual Percentage Yield. Maximum participation is \$1,000 and is limited to one certificate per member household. Certificate will automatically roll to a 12-month term upon maturation at regular 12-month interest rate. Offer available with new or existing Premier Checking Account with direct deposit of your paycheck. Coupon valid through May 31, 2014. Coupon must be presented at time of application.

002

## 12-YEAR REFINANCE NO CLOSING COSTS!

You could save thousands of dollars in interest with our 12-Year Mortgage. Plus, pay **NO CLOSING COSTS!** Rates as low as 3.49% APR\*

Interest rate assumes a \$100,000 loan amount for qualified borrowers with a maximum LTV of 80%. Rates effective January 1, 2014 and subject to change. Interest rate subject to credit worthiness, property values, and other qualifying factors. No closing costs due at the time of application. Existing Pathways loans not eligible. Coupon valid through May 31, 2014.

### SAVE **\$500**

Save \$500 on closing costs when you transfer your current mortgage loan to Pathways.

Coupon valid through May 31, 2014. Coupon must be presented at time of application. Loan subject to credit approval. Loan must be closed on-site at PFCU branch locations. Existing Pathways loans not eligible.

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Enjoy a 6-month introductory rate of **3.99% APR\*** on a Pathways Platinum Rewards Visa. **No balance transfer fees or annual fee!**Rates as low as **7.99% APR\*** after six months.

All rates are expressed in terms of annual percentage rate. Credit applications are subject to credit approval. You interest rate and repayment terms will be based on your individual credit history and may be different from rates quoted above. Coupon valid through May 31, 2014.

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490 South Jefferson Ave. Plain City, OH 43064 614-873-6652

#### **Gahanna/New Albany**

5665 North Hamilton Rd. Columbus, OH 43230 614-416-7588

#### **Delaware**

879 West William St. Delaware, OH 43015 740-363-4646

#### **West Columbus**

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Space in the Ohio Section newsletter may be purchased for \$125 per year. The fee entitles you to a business-card size advertisement in the newsletter, the Annual Meeting program, and a hotlink on the Section website. Please contact the Treasurer for details.



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