AIPG Ohio Section 2017 Autumn Meeting and Dinner Presentation
Riverbank Filtration – Successes and Failures – Case Studies
Presenter: Samuel M. Stowe, CPG
Date: Thursday, September 14, 2017
Location: La Scala Italian Bistro, 4199 West Dublin-Granville Road, Dublin, Ohio
Schedule: Social Hour at 5:00 pm; Dinner at 6:00 pm; Presentation at 7:00 pm
Event RSVP: aipgohio@gmail.com
See Page 6 for event details

AIPG OHIO SECTION 2017
VAPOR INTRUSION SHORT COURSE
October 24 and 25, 2017 at ODNR H.R. Collins Core Laboratory Conference Room in Delaware, Ohio
See page 10 for details

Also In This Issue:

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Message from the President

Brent R. Smith, CPG-11130

Hello fellow AIPG Ohio Section members. Summer is over, school is back in session, and I’m sure everyone was able to get all of their field work done before the weather starts to cool! 2017 has continued to cruise by at the speed of a p-wave through rhyolite. With the summer now a fading memory our eclipse-parched eyes must now focus on an exciting finish to 2017! That being said the Executive Committee has worked diligently over the summer to organize several events sure to captivate including an Autumn Dinner presentation later this month, a Vapor Intrusion Short Course in October, and of course our always enjoyable Annual Meeting in November. But more on that later.

Looking back on the past months, 2017 has continued to be an excellent year for the Ohio Section of AIPG. Prior to the summer break, we held two events including a student field trip and dinner meeting. On April 15th, 2017, the Ohio section of AIPG had a joint field trip with students from Ohio State and Wright State University. The temperamental Ohio weather decided to be cooperative and granted us with ideal hiking weather to observe the fascinating concretions present in the Ohio Shale. The tour was led by former AIPG Ohio section president, Curtis Coe, and OSU sedimentologist, Dr. Larry Krissek.

Our second dinner meeting of 2017 was held on April 20th at La Scala in Dublin. Barry Allred, PhD, U.S. Department of Agriculture Agricultural Research Service and Ohio State Adjunct Assistant Professor, Food, Agricultural, and Biological Engineering Department, Ohio State University, presented USDA/ARS Soil Drainage Research and Recent Developments in Agricultural Geophysics. The presentation included an overview of projects being completed by the Agricultural Research Service (ARS), which is the U.S. Department of Agriculture’s (USDA) chief scientific in-house research agency, as well as a summary of other cutting-edge geophysics projects being completed around the nation.

We also took the opportunity at the April meeting to recognize outgoing student Chapter Presidents Emily Warren of WSU and Shelby Brewster of OSU for all of their efforts in leading their organizations. Emily, who has been an active member of the WSU student chapter for several years, was instrumental in organizing the WSU Student Chapter events that occurred during the 2016-2017 academic year, including a field trip to Clifton Gorge and the February 2017 AIPG Ohio Section Winter Meeting, along with numerous other student meetings and events. Shelby Brewster, also an active member of the OSU Student Chapter, was responsible for organizing the OSU Student Chapter events for the 2016-2017 academic year, which included a fall 2016 field trip to the Carnegie Museum of Natural History in Pittsburgh, the April 2017 field trip to Shale Hollow, and numerous student events including guest speaker presentations and internal...
meetings. Thanks again to both of them and we wish them well in what promises to be bright futures!

On the subject of our student groups, we will continue to plan additional events with the WSU and OSU Student Chapters this academic year, so be on the lookout for announcements and please feel free to attend or volunteer. We are continuing to reach out to other Universities including Miami of Ohio, Kent State, and Bowling Green. If you have contacts at the earth sciences departments or would like to volunteer to be a student Chapter liaison please let us know.

In other developments, the Executive Committee of the AIPG Ohio Section is currently working on the ballot for the election of 2018 Officers. We anticipate holding the election in October with the plan to announce the new Committee members at the Annual Meeting in November. It’ll be a big one this year with the President-Elect, Secretary, Treasurer, and three Member-At-Large positions on the ballot. While we have some candidates lined up, we are still seeking members willing to serve as a Member-At-Large. For those of you not familiar with the position, Members-At-Large are voting members of the Executive Committee with no particular set of duties (such as a Treasurer, etc.) that are expected to provide additional opinions and ideas on Section business and assist our ad-hoc committees. We typically have three Member-At-Large positions elected each year for a one-year term. Each Member-At-Large is expected to attend the Executive Committee meetings and Dinner Presentations, and help to organize official Section events such as field trips and Student Chapter events. We would also like to have one Member-At-Large that is willing to serve as our Media Manager to promote Section activities via e-mail, Twitter, Facebook, and other news feeds. Please contact us if you are interested in volunteering.

As for upcoming events, our autumn 2017 Dinner Meeting and Presentation will be held on September 14 at La Scala in Dublin, and will feature Sam Stowe of Ranney Collector Wells presenting *Riverbank Filtration - Successes and Failures - Case Studies*. In addition, the AIPG National Annual Conference will be in Nashville Tennessee this year on September 23 through 26 so please visit the National website and consider attending. I will be attending along with President-Elect Colin Flaherty. WSU Student Baylee Stark will also be presenting a poster at the National Meeting.

On October 24 and 25 we will be holding our first Vapor Intrusion (VI) Short Course at the ODNR H.R. Collins Core Laboratory Conference Room in Delaware. The course, developed by our good friends at Cox-Colvin & Associates, will cover all aspects of VI, from site investigation to mitigation. In case you have not heard, we will also be providing CEUs through AIPG National and were recently approved for 11 PDHUs for Ohio Voluntary Action Program Certified Professionals. Please consider attending as it should prove to be a comprehensive training course given by some of the industry’s leading professionals on VI.

Of final note for the remainder of 2017, our Ohio Section Annual Meeting is scheduled for November 16 and will be held at La Scala in Dublin. President-Elect Colin Flaherty was able to secure Laura Factor, Assistant Director of the Ohio EPA, as the guest speaker. While final details are being ironed out, it is anticipated that Laura will focus on the state of the Ohio EPA and plans
moving forward based upon ongoing Federal issues. Keep your eyes and ears open as registration details are forthcoming.

In the coming months we will continue to provide updates via the newsletter, website blog, and social media, as we anticipate a fun and busy finish to 2017. Also, please feel free to contact us at the Executive Committee if you would like to volunteer or have suggestions for blog posts, field trips, or meetings. Contact information can be found on the website at https://www.aipg-ohio.org/officers1.php.

Until next time,

Brent R. Smith, CPG 11130
2017 AIPG Ohio Section President

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**Calendar of Upcoming Events**

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Details</th>
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<tbody>
<tr>
<td>SEPTEMBER 14</td>
<td>AIPG Ohio Section Autumn Meeting and Dinner Presentation at La Scala Italian Bistro, 4199 West Dublin-Granville Road, Dublin – Riverbank Filtration – Successes and Failures – Case Studies, by Samuel M. Stowe, CPG of Ranney Collector Wells; <a href="http://www.aipg-ohio.org">www.aipg-ohio.org</a> (see Newsletter page 6).</td>
</tr>
<tr>
<td>SEPTEMBER 24–27</td>
<td>Eastern Section AAPG Meeting – Unconventional Shales, Morgantown, West Virginia, mapwv.gov/esaapg</td>
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<tr>
<td>OCTOBER 24–25</td>
<td>AIPG Ohio Section Vapor Intrusion Short Course at the ODNR Ohio Geological Survey H.R. Collins Laboratory at Alum Creek State Park – by AIPG Ohio Section in conjunction with Cox-Colvin and Associates, Inc.; <a href="http://www.aipg-ohio.org">www.aipg-ohio.org</a> (see Newsletter page 10).</td>
</tr>
<tr>
<td>NOVEMBER 16</td>
<td>AIPG Ohio Section AIPG Annual Meeting and Dinner Presentation at La Scala Italian Bistro, 4199 West Dublin-Granville Road, Dublin – featured presenter will be Laura Factor, Assistant Director of the Ohio EPA; <a href="http://www.aipg-ohio.org">www.aipg-ohio.org</a>.</td>
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</table>
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Ohio Section Autumn 2017 Meeting and Dinner Presentation Preview

Feature Presentation: RIVERBANK FILTRATION – SUCCESSES AND FAILURES – CASE STUDIES

Presented By: Samuel M. Stowe, CPG

The Ohio Section of AIPG is pleased to host Samuel M. Stowe, P.G., of Ranney Collector Wells, at the Section’s Autumn Meeting and Dinner presentation, which will take place on Thursday, September 14, 2017 at La Scala Italian Bistro (www.lascalaitalianbistro.com) located at 4199 West Dublin-Granville Road in Dublin. Mr. Stowe will be presenting: Riverbank Filtration – Successes and Failures – Case Studies. The Autumn Meeting and Dinner presentation is sponsored by ALS Global and In-Situ.

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 at aipgohio@gmail.com if you plan to attend.

Riverbank Filtration – Successes and Failures – Case Studies

by Samuel M. Stowe, CPG.

ABSTRACT

Proper study and understanding of the key elements of riverbank filtration (RBF) are critical to the siting, construction and operation of RBF water supply systems. RBF has been used for over 100 years in Europe as a means of drinking water treatment. In the USA, RBF has been acknowledged for nearly 30 years, but primarily to sustain high aquifer yields and as a pre-treatment for water supplies.

Four case studies of RBF installations are presented, discussing the contributing factors that lead to the success or failure of the installed system. Successes include one installation in Kansas City, KS, which consists of two large horizontal collector wells along the Missouri River that can yield over 70 million gallons per day (MGD). Another success includes the first horizontal collector well in New Hampshire, with the results of recent warm-water and cold-water testing. Failures include a recent installation of five (5) horizontal collector wells in Malaysia, whose total yield was only 40% of that predicted. The other failure was the South Wellfield of the City of Columbus, Ohio. Though now an integral and valuable part of the City’s water supply system, studies in the 1970s overestimated the RBF contribution from the Scioto River.
PRESENTER
Hydrogeologist Samuel M. Stowe has over 40 years of diverse experience in the groundwater industry. He has been in responsible charge of projects involving aquifer-test analyses, riverbank filtration and recharge evaluation, groundwater quality, well design, groundwater management, numerical modeling, contamination investigation and remedial action. He has been involved in groundwater supply projects for yields of nearly 100 million gallons per day (MGD) and in contamination evaluations ranging from industrial organic pollution from landfills to the environmental effects of strip and deep-coal mining. Mr. Stowe is highly experienced in evaluations of induced infiltration potential (riverbank/riverbed filtration (RBF)) from streams and oceans. He has completed hundreds of hydrogeological evaluations for horizontal collector wells in regard to yield, quality and design, having been responsible for siting and designing many horizontal collector wells with individual yields ranging from 2 to 50 MGD and is a recognized expert in their application. His work has taken him to nearly every state in the USA, along with Mexico, Canada, Europe, Africa, South America and Asia. Currently, Stowe is General Manager of Ranney Collector Wells, a unit of the Layne Christensen Company. He received a B.A. in geology from Miami University and a M.S. in geology from The Ohio State University.

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Meeting Complex Environmental Regulatory Requirements
The AIPG Ohio Section is pleased to announce an upcoming Vapor Intrusion Short Course. Vapor intrusion (VI) is the migration of undesirable chemical components into indoor airspace. Vapor intrusion into buildings is one of the primary routes of human exposure to volatile organic compounds released to the subsurface. This short course will cover VI aspects including the physical processes governing subsurface vapor transport and entry into buildings, VI assessment, monitoring and mitigation strategies, VI risk analysis, legal aspects, case studies and field demonstrations.

**TOPICS OF DISCUSSION**

- History of Chlorinated Solvents & Soil-gas Sampling
- Regulatory Framework
- Vapor Sources
- Subsurface Sampling
- Predicting Vapor Intrusion To Indoor Air
- Measuring Indoor Air Samples
- Data Interpretation
- Exposure/Receptor Types
- Mitigation Approaches
- Post-Mitigation Sampling & Long-Term Monitoring
- Case Studies
- Community Involvement
- Legal Liability & Obligations
SPEAKERS

MORT SCHMIDT – COX-COLVIN & ASSOCIATES, INC.

Mr. Schmidt has 35 years of experience as a professional geologist in the United States and overseas and is experienced in a diverse range of geological settings, specializing in vapor intrusion pathway evaluations. Mort Schmidt received his B.S. and M.S. degrees in Geology from the Ohio State University. He served for nine years as an exploration geologist for Shell Oil in the Williston Basin, the Amazon Basin, Trinidad, Gabon, and the U.S. Gulf Coast. In the past twenty-six years, Mr. Schmidt served two years as a radon investigator for the Ohio EPA, and for twenty-four years as an environmental consultant. Mort is currently Practice Leader for vapor intrusion for Cox-Colvin, & Associates in Plain City, Ohio. As Cox-Colvin's Vapor Intrusion Practice Leader, Mr. Schmidt oversees and advises project personnel on the investigation of vapor intrusion and its potential effect on indoor air. 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. Mort has served or is serving on the American Association of Radon Scientists and Technologists (AARST) board to revise radon measurement standards in multifamily buildings, and on the American Society for Testing and Materials (ASTM) committee to develop the standard for Long-Term Monitoring (LTM) of vapor-mitigation systems. Prior to his work in geology, Mr. Schmidt served in the US Army repairing cryptographic (code) equipment.

CRAIG A. COX - COX-COLVIN & ASSOCIATES, INC.

Mr. Cox is a principal and co-founder of Cox-Colvin & Associates. Much of Mr. Cox's experience involves the direction of major environmental investigation and remediation projects conducted under CERCLA, RCRA, and state voluntary programs. Mr. Cox is instrumental in providing technical oversight to project teams, assisting in the development of investigation and remediation strategies, assessment and evaluation of hydrogeologic information, as well as the development and implementation of project management strategies.

Mr. Cox has successfully proposed, negotiated, and implemented hydrogeologic investigations and remedial actions at a variety of sites in US EPA Regions III, V and VII. His experience includes sites affected by VOCs, SVOCs, DNAPLs, LNAPLs, metals, and petroleum products. Throughout his career, Mr. Cox has consistently supplied clients with technically-sound, cost-effective solutions to their environmental needs.

In addition to work as a hydrogeologist, Mr. Cox has also developed a variety of software products for the environmental field including Data Inspector, an internet-based database application used to manage, retrieve, evaluate, and present all forms of environmental project-related data. He also designed and patented the Vapor Pin, as sub-slab soil gas sampling device used in vapor intrusion studies.

ED PFUAU – HULL & ASSOCIATES, INC.

Ed Pfau is a Principal Scientist with Hull & Associates in Dublin, Ohio. He has 25 years of experience in environmental toxicology and environmental risk assessment. He prepares and reviews human health and ecological risk assessments for brownfields, hazardous waste management units,
Superfund sites, and other sites where hazardous substances or petroleum pose a potential or known environmental or regulatory concern. He conducts environmental fate and ecotoxicological evaluations as part of chemical safety assessments prepared to meet registration requirements for chemical manufacturers in the United States and Europe. Before joining Hull, Ed was a senior toxicologist and risk assessor for the Ohio EPA, where he was responsible for rules development, technical guidance and critical review and approval of risk assessments under the Ohio Voluntary Action Program (VAP) and other programs. Ed has both Master’s and Bachelor’s degrees in Biology. He has served on several committees, including the ASTM E50.04 Voluntary Cleanup Task Group and the generic standards and risk assessment committee under the Ohio EPA VAP Multi-Disciplinary Board. He is an active member of the Society of Environmental Toxicology and Chemistry and the Society for Risk Analysis.

CARRIE RASIK – OHIO EPA

Carrie Rasik received a B.S. in Natural Resources and a M.S. in Environmental Sciences from The Ohio State University. She first worked for the Ohio EPA an intern for the Right to Know and Toxic Release Inventory programs in 2005 and 2006, and then for the Site assessment and Brownfield Restoration program in 2007. In 2008 she began a full time position with Ohio EPA’s Division of Emergency and Remedial Response as a risk assessor. Carrie will give a presentation of Ohio EPA’s guidance document on recommendations regarding response action levels and timeframes for trichloroethylene at vapor intrusion sites in Ohio (finalized August of 2016) and examples illustrating its implementation.

MONICA WILLIAMSON – HULL & ASSOCIATES, INC.

Monica is a Senior Scientist with Hull & Associates in Dublin, Ohio. She has 15 years of experience in site assessment, remediation and environmental risk assessment. Monica has prepared human health and ecological risk assessments for the U.S. EPA’s Comprehensive Environmental Response, Compensation and Liability Act (CERCLA, a.k.a. Superfund) and Resource Conservation and Recovery Act (RCRA) Corrective Action programs in Regions I, III, IV and V; the Ohio EPA Voluntary Action Program (VAP) and state-lead RCRA programs; and other regulatory programs. Additionally, Monica has provided technical oversight on the evaluation of chemical bioaccessibility and bioavailability, and chemical fate and transport, including the leaching behavior of contaminants, vapor intrusion evaluations, and attenuation of chemicals in groundwater in support of assessment and remediation. She serves as Hull’s Quality Assurance Officer (QAO) and is responsible for designing and implementing the Quality Management Plan, including development of Data Quality Objectives (DQOs) to support risk assessment. Monica holds a Master of Science in Soil Science, emphasis in Environmental Chemistry, and a Bachelor of Science in Natural Resources from The Ohio State University.

SCOTT DORAN - KEGLER, BROWN, HILL & RITTER

Scott joined Kegler Brown in 2013 and has more than 25 years of experience assisting individuals, small businesses and industry clients in managing federal, state and local environmental, facility siting and natural resource utilization issues. This experience provides a strong foundation for offering effective short-term and long-term strategic advice and perspective.
ENVIRONMENTAL LAW

Scott has assisted clients with the resolution of federal and state environmental enforcement actions, governmental and private-party cost recovery actions, toxic tort claims and citizen suits. He has facilitated state and federal permitting associated with industrial, commercial and residential site development, oil and gas production and transmission, and natural resource mitigation banking. Scott is active in a number of industry associations and regularly contributes to industry-wide efforts to achieve cost-effective and predictable state and federal rulemaking.

PRACTICE AREAS

- Energy + Environment
- Government Affairs
- Litigation
- Real Estate

TONY MCDONALD  A-Z SOLUTIONS, INC. VP OF OPERATIONS

Tony is a founding member of A-Z Solutions, Inc. He has over 20 years of leadership experience in the design and installation of radon and vapor intrusion mitigation systems, totaling approximately 10,000 combined commercial and residential properties. As Vice President of Operations and Senior Project Manager, Tony personally inspects all sub-slab depressurization system installations to ensure every component meets rigorous quality and safety standards. Tony is a graduate of Mount Union University in Alliance, Ohio and currently sits on the American Association of Radon Scientist and Technologist (AARST) national board of directors.

COST

- AIPG Members: $250 for registration before September 8, 2017, $300 for September 9, 2017 or later.
- Non-Members: $300 before September 8, $350 for September 9 or later.

For additional information and registration please go to:

https://www.aipg-ohio.org/payment.php
## APPROXIMATE COURSE SCHEDULE

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<th>Topic</th>
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<tbody>
<tr>
<td>10/24/17</td>
<td>7:30 AM</td>
<td>8:15 AM</td>
<td>Registration/Breakfast</td>
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<td>Orientation</td>
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<td>8:30 AM</td>
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<td>History of Solvent Use (C. Cox)</td>
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<td>Conceptual Site Model (M. Schmidt)</td>
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<td>Regulatory Framework (S. Doran)</td>
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<td>Soil Assessment (Petroleum Hydrocarbons) (M. Schmidt)</td>
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<td>Questions and Answers</td>
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<td>Lunch</td>
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<td>Groundwater Assessment (VISL) (M. Schmidt)</td>
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<td>Soil-Gas Collection and Monitoring (M. Schmidt)</td>
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<td>Soil-Gas Collection and Monitoring (Continued) (M. Schmidt)</td>
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<td>Demo/Vendor Presentations (EnviroCore, IE, Vapor Pin)</td>
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<td>Soil-Gas Interpretation (VISL and RALS) (M. Schmidt)</td>
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<td>TCE Real Time Monitoring (M. Williamson)</td>
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<td>Response Action Levels (RALs) Ohio EPA (C. Rasik)</td>
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<td>Indoor Air Collection &amp; Measurement (M. Schmidt)</td>
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<td>TCE Risk Decision Matrix (E. Pfau)</td>
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<td>Indoor &amp; Ambient Air Interpretation (M. Schmidt)</td>
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<td>Vapor Mitigation &amp; Long Term Monitoring (M. Schmidt)</td>
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<td>Subslab Depressurization Systems (A-Z)</td>
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<td>Barrier Systems (EMS)</td>
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The Wright State University (WSU) Student Chapter of AIPG has begun the 2017-2018 academic calendar with three new officers: Ashlynn Boedecker is the chapter president, Kali Irvin will serve as Vice President, and the role of Treasurer has been filled by Baylee Stark. Paul Downing has been retained as secretary from the previous administration. Readers may recall that Baylee Stark contributed an article entitled Dynamic Teaching of “Dynamic Earth” at Wright State University, which appeared in the January-February-March 2017 issue of the AIPG publication The Professional Geologist. A copy of the article was included in the April 2017 Newsletter. Dr. Stacey Hundley is the WSU student chapter advisor.

The Newsletter has learned that the WSU Student Chapter of AIPG held their first meeting of the new academic year on September 7th. We look forward to hearing more about the upcoming schedule and plans of the WSU chapter.

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<tr>
<th>OFFICERS</th>
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<tbody>
<tr>
<td>President</td>
<td>Ashlynn Boedecker</td>
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<tr>
<td>Vice President</td>
<td>Kali Irvin</td>
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<tr>
<td>Secretary</td>
<td>Paul Downing</td>
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<td>Treasurer</td>
<td>Baylee Stark</td>
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<table>
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<tr>
<th>ADVISOR</th>
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<tbody>
<tr>
<td>Stacey Hundley, Ph.D., Lecturer, Earth &amp; Environmental Sciences Department, MEM-2546</td>
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Please take a moment and welcome these WSU Student Chapter of AIPG officers and their fellow student members at a future AIPG event.
A new slate of officers has been elected by The Ohio State University Student Chapter of AIPG, led by incoming chapter President Rebecca (Becky) Anderson. Prescott Vayda will serve as the Treasurer, and the role of Secretary has been filled by Cole Bradley. The Vice President position has not been filled as of the publishing of the Newsletter. The new chapter advisor is Dr. Frank Schwartz.

Ms. Anderson is in the process of planning a schedule of activities for the new academic year. Chapter goals include monthly meetings featuring speakers, as well as a local field trip. Plans may also be in the works for a visit to the Cleveland Museum of Natural History in November. We look forward to hearing more about their plans in the upcoming weeks.

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<th>The Ohio State University Chapter of AIPG, 2017 – 2018</th>
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<td>OFFICERS</td>
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Please take a moment and welcome these OSU Student Chapter of AIPG officers and their fellow student members at a future AIPG event.
Ohio State University Student Chapter Field Trip to Shale Hollow Preserve

By: Shelby Brewster, OSU Student Chapter Past President

On April 15, 2017, the AIPG student chapter of The Ohio State University (OSU) visited Shale Hollow Preserve park in southern Delaware County, Ohio. The field trip was conducted jointly with the Ohio Section of AIPG, and was also attended by several members of the Wright State University student chapter. The temperamental Ohio weather decided to be cooperative for the event and granted us with ideal hiking weather. The tour was led by former Ohio Section president Curtis Coe, and OSU sedimentologist, Dr. Larry Krissek.

Shale Hollow Park boasts some of the biggest Devonian carbonaceous concretions found in the Ohio Shale. During the Devonian, otherwise known as the “Age of Fishes”, Ohio was flooded by seas and teemed with aquatic life including trilobites, brachiopods, and massive fish such as the famous Dunkleosteus. As these ancient fish hit the sea bed, concretions began to form around the organic mass. The Ohio Shale concretions are interpreted to have been formed after the deposition of the
thinly bedded shales due to the nature of the shale bending around the concretion as a result of stress from the growing mass.
This is not an ideal location for paleontologists due to anoxic conditions during the deposition of the shale. However, halved concretions sometimes show their fossil nuclei in their center. Other unique features Mr. Coe and Dr. Krissek pointed out to us were faux mudcracks (because mudcracks would not typically form in deep waters), the Olentangy and Ohio Shale contact, and trace fossils.
The hike ended with a group photo and snacks generously provided by the professional chapter. This hike has given us a greater appreciation for the incredibly unique geology that Ohio offers; most of us were shocked to see such massive concretions and interesting geologic features in a park that are literally right next to a typical suburban neighborhood. The next time someone says Ohio is boring, we are now equipped with the knowledge to inform them that giant fish swimming in their backyard 400 million years ago formed those Smart car-sized concretions!
Additional Information and Resources

**Shale Hollow Preserve** winds along a twisting corridor consisting of 20 to 40-foot Ohio Shale cliffs and provides a great opportunity to see concretions in their natural setting. Concretions in the Lower Huron member are abundant at the park and range from marble-size to nine feet in diameter. The concretions are composed primarily of carbonate rock enclosed in the dark gray to black shale. Horizontal ribbing is often evident representing layering of the surrounding shale prior to compaction and vertical cracks are commonly filled with secondary minerals such as calcite or barite.

The spectacular exposures of Devonian Ohio Shale at Shale Hollow were featured during the *Ohio’s Geology in Core and Outcrop* short course presented during the AIPG National conference *The Expanding World of Unconventional Shale Hydrocarbon Resources* held in Columbus in April. For those who were unable to attend the conference and short course, the Ohio Section of AIPG is hosting our summer outing at Shale Hollow Preserve.

**Field trip guidebook** – *Geological Field Guide to Shale Hollow Preserve, Camp Lazarus, and Highbanks Metropark*, by Mohammad D. Fakhari. (LINK)

**ODNR Geofacts No. 4** - *Ohio Shale Concretions*, compiled by Michael C. Hansen, October 1994. (LINK)
The Ohio Section’s Spring 2017 meeting and dinner presentation was held on April 20th at La Scala Italian Bistro, in Dublin, Ohio. Guests enjoyed a social hour followed by an excellent dinner. The event was well attended by a diverse mixture of professionals and students, including representatives from The Ohio State University (OSU) and Wright State University (WSU) student chapters. The event was sponsored by ALS Environmental, EA Group, and In-Situ.

At the conclusion of dinner 2017 AIPG Ohio Section President Brent Smith, welcomed the attendees and gave an update on previous and upcoming Ohio Section events for the year. This included the student-run Winter Dinner Meeting at WSU in February, and the April OSU Student Chapter Field Trip to Shale Hollow. Future events discussed included the Autumn 2017 dinner
meeting, the AIPG National Conference in Nashville, Tennessee, and the AIPG Ohio Section Vapor Intrusion Short-Course scheduled for October 2017.

Brent also recognized student chapter Presidents Emily Warren of WSU and Shelby Brewster of OSU, for all of their efforts in leading their organizations. Both students were in the midst of preparing for finals ahead of graduation and a promising future. Emily, who has been an active member of the WSU student chapter for several years, was instrumental in organizing the WSU Student Chapter events that occurred during the 2016-2017 academic year, including a field trip to Clifton Gorge and the February 2017 AIPG Ohio Section Winter Meeting, along with numerous other student meetings and events. Shelby Brewster, also an active member of the OSU Student Chapter, was responsible for organizing the OSU Student Chapter events for the 2016-2017 academic year, which included a fall 2016 field trip to the Carnegie Museum of Natural History in Pittsburgh, the April 2017 field trip to Shale Hollow, and numerous student events including guest speaker presentations and internal meetings. Thanks again to Emily and Shelby for all of their efforts and here’s to a promising future for both of you!

Following the President’s message, Brent Smith introduced the guest speaker for the evening, Barry Allred, PhD, of the U.S. Department of Agriculture (USDA) Agricultural Research Service (ARS) and Ohio State Adjunct Assistant Professor for the Food, Agricultural, and Biological Engineering Department. The presentation began with a short overview of the ARS, which is the
USDA’s chief scientific in-house research agency. In comparison, the USDA/ARS is about equal in size to the U.S. Geologic Survey, and consists of over 2,000 scientists and 6,000 support staff working on 17 National programs at over 90 research stations, including joint partnerships with universities such as OSU. The USDA/ARS - Soil Drainage Research Unit (SDRU), located in Columbus, Ohio, investigates various aspects and issues related to agricultural drainage practices, including engineering design, system performance monitoring and improvement, economic considerations, and assessment/mitigation of environmental impacts.

Barry presented a general summary on current work being conducted in Ohio by the USDA/ARS-SDRU, including research on water recycling systems, drainage water filtration, and mapping of subsurface drainage with geophysics. The overall message of the research was to determine ways to more effectively manage water and fertilizer in order to improve crop production and reduce runoff of nitrate and phosphate to larger water bodies, thus reducing the overall environmental impact of modern farming. This includes the mapping and improvement of existing field drainage systems, implementation of filtration and recycling of runoff, and improved field application techniques for fertilizers. For example, in the face of potential climate change and drought conditions, Barry presented a study where up to 7% of the acreage of a given farming area could be used to construct a treatment wetland and retention basin without an economic hardship to the farmer due to reduced yield. This acreage can then be used for the collection and treatment of runoff, which is then stored in a retention basin until needed for irrigation. Overall, the study showed a net benefit through improved water management and reduced environmental impact. The remainder of the presentation focused on an expanded overview of recent developments in agricultural geophysics, including the use of GPR, electromagnetic induction and resistivity, and satellite and drone imagery. Special thanks to Mr. Allred for his excellent presentation. More information on the USDA ARS can be found here: [https://www.ars.usda.gov/](https://www.ars.usda.gov/) and more information on Barry and his current research can be viewed here: [https://www.ars.usda.gov/midwest-area/columbus-oh/soil-drainage-research/people/barry-allred/](https://www.ars.usda.gov/midwest-area/columbus-oh/soil-drainage-research/people/barry-allred/).
Representatives of the WSU Student Chapter of AIPG at the Spring Meeting and Dinner Presentation.

The OSU Student Chapter of AIPG in attendance at the Spring Meeting and Dinner Presentation.

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As part of the activities at this year’s AIPG National Conference in Nashville, Tennessee, the AIPG Foundation will hold a silent auction at the Welcome Reception function on Sunday, September 24th beginning at 6 pm at the conference headquarters hotel. Items donated for the silent auction will be used to raise funds in support of the Foundation for AIPG programs, scholarships, internships, and various initiatives. Winning bids will be determined at the end of the evening function, at about 8:30 pm.

Ohio Section member and Historian Brent Huntsman contacted me in June 2017 with an interesting idea. The Foundation, of which Mr. Huntsman is a trustee, was reaching out to each AIPG Section with the goal of obtaining either the representative state fossil, or a fossil collected in the Section territory.

For several years, the Ohio Section of AIPG has been giving out awards to guest speakers featuring a cast of the state fossil of Ohio, specifically, an Isotelus collected in southeast Ohio. These casts were obtained from renowned fossil hunter Tom Johnson, owner and proprietor of The House of Phacops in Peebles, Ohio. Over the summer I reached out to Mr. Johnson, who provided the Section a recently collected specimen to donate to the Foundation. This specimen, pictured below, was recently collected by Mr. Johnson from the Waynesville Formation in Adams County, Ohio.

The Isotelus specimen (see photo) has a length of approximately 2¾ inches on a matrix measuring about 5½ by 5½ inches. It was found in a silty nodule that apparently exploded when Mr. Johnson broke it open. Therefore, a minor restoration of the rock matrix and trilobite was completed, but as you can see, it is still very display worthy. More information on the state fossil of Ohio can be viewed on the Ohio Division of Geological Survey publication, Geofacts No. 6 (here).

In addition, during our February 2017 Dinner Meeting at Wright State University (WSU), the AIPG Ohio Section obtained two specimens of an ornamented ammonite (mortoniceras equidistans) collected from an area southwest of Houston, Texas from the student-run silent auction. We also be donating the larger of the two specimens to the AIPG Foundation Silent Auction. The ammonite
was collected by WSU PhD candidate David Peterman from the Duck Creek Formation near Lake Texana and dates back to the Cenomanian age of the late Cretaceous.

David Peterman is currently enrolled in the PhD program at the College of Science and Mathematics at WSU, and has been very active in the WSU Student Chapter for several years. David is originally from Pataskala, Ohio and transferred to WSU from The Ohio State University in 2012. At WSU, he completed his Bachelor of Science's in Earth and Environmental Sciences and his Master of Science's in Geophysics. His primary research interest is the paleobiology of fossil cephalopods. Specifically, the evolution and functional morphology of septal walls in ammonite shells where he is currently researching the use of fractal analysis to quantify the degree of complexity in these patterns to better understand their purpose. He recently presented at American Geophysical Union and has submitted a manuscript to the Journal of Paleontology regarding his research.

I look forward to discussing these museum-quality specimens with potential bidders at the 2017 annual meeting. Your winning bid will directly benefit the next generation of professional geologists and is greatly appreciated.

More about the AIPG Foundation and the Silent Auction:  http://aipg.org/foundation

More about Tom Johnson and the House of Phacops Rock Shop:  http://alternateuniverserockshop.com/

The House of Phacops is a rock shop and trilobite gallery located on the southeastern edge of the Serpent Mound impact crater approximately three and a half miles from Serpent Mound.

Since 1978 this small business has supplied fossil and mineral specimens worldwide. The shop features fossils, minerals, custom handmade jewelry, art, carvings, music and herbs. The centerpiece of the shop is a Trilobite Gallery created for the U.S. National Museum of Natural History at the Smithsonian Institution.
The Trilobite Gallery was created in 1986 to display the Thomas T. Johnson Collection at the Smithsonian, and later moved to the House of Phacops. Many of the Trilobites in the gallery were loaned to the Smithsonian’s "Life in the Ancient Seas" Gallery before being re-united with the House of Phacops Gallery in 1990. Some of the specimens have been viewed by over 200 million Smithsonian visitors.

Tom Johnson, owner of The House of Phacops, began researching the Isotelus Trilobite, Official State Fossil of Ohio, in 1985. The largest known example of the State fossil is on exhibit at his shop. Built on the foundation of a tannery that operated in Locust Grove around 1850, the building is clad with Ordovician flat rock quarried in Adams County. The Ordovician seabed, dating back 438 million years, attracted Johnson to Adams County because the ancient seabed contains the finest known examples of the Isotelus Trilobite.

More on the Duck Creek Formation: [http://northtexasfossils.com/duckcreek.htm](http://northtexasfossils.com/duckcreek.htm)
The Ohio Department of Natural Resources (ODNR) is accepting applications for the Ohio Geology License Plate Fund grant program. Now in its third academic year, this program through ODNR’s Division of Geological Survey supports graduate students researching the state’s geology.

The ODNR Division of Geological Survey has increased the grant amount this year. In autumn 2017, two $2,500 grants will be awarded to earth science students at Ohio colleges and universities for graduate-level research on Ohio’s geology. The grantees are selected based on the quality of their applications, the strength of their professors’ letters of reference and the relevancy of the proposed research.

“In keeping with the intent for this Ohio Rocks! program, we continue to offer these scholarships to fund studies that increase our knowledge of the geology of Ohio,” said Tom Serenko, state geologist and chief of the ODNR Division of Geological Survey. “We have seen some very good projects over the past two years, and we look forward to learning what students and universities are exploring in the 2017–2018 academic year.”

Established in 2012, the grant program is funded through renewals of the Ohio Rocks! license plates purchased from the Ohio Bureau of Motor Vehicles. The revenue generated is used to promote earth science education and outreach throughout the state. While sales of new license plates have been discontinued, the revenue coming in from renewals has been sufficient to increase the amount of the award.

The deadline for application submission is Friday, Oct. 20. The application and complete submission guidelines can be found on the division’s website at goo.gl/nMoFCA.

The full article can be viewed here.

For more information, contact: Matt Eiselstein, ODNR Office of Communications 614-265-6860
Chuck Salmons, ODNR Division of Geological Survey 614-265-6576
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ALEXANDRIA, Virginia - The American Geosciences Institute (AGI) is pleased to announce the completion of fifty new factsheets, which quantify the tangible contributions of geoscience (earth science) to the economy, environment, public health and safety of every U.S. state.

"As geoscientists, we study the Earth system in every corner of the country," said Maeve Boland, Director of Geoscience Policy at AGI. "But it has been difficult to compare the value and contribution of our science to individual states."

Recognizing this need, AGI has gathered information from nationwide sources to generate this comprehensive, standardized set of factsheets. Unlike a lengthy report, these factsheets allow federal and state decision-makers to glean important facts about the role of geoscience and the government agencies that fund geoscience in their states as quickly as possible.

"The factsheets are each thoughtfully divided into ten sections with identical line items that can be compared apples-to-apples across all fifty states," said Boland.

Perhaps most importantly, the factsheets frame geoscience as a discipline that brings benefits to every state. Water, minerals, and petroleum - all natural resources that many of us take for granted - would not be safely available without geoscience. Furthermore, geoscience brings jobs, attracts students and faculty to universities, and spurs research and innovation, while helping mitigate the risks of public health emergencies and natural hazards like earthquakes, hurricanes, and droughts.

These factsheets can also inform government policies and budget decisions on geoscience topics. When geoscientists arrive on Capitol Hill in September for in-person visits with their state representatives as part of the 10th annual Geosciences Congressional Visits Days, they will be bringing these factsheets with them. Allyson Anderson Book, AGI's Executive Director, believes that is important.

"Here at AGI we work to make earth science accessible - regardless of whether you are a geoscientist or not. With these factsheets, scientists can more easily communicate how geoscience is vital to society at the state and local level."


**About the American Geosciences Institute:** The American Geosciences Institute is a nonprofit federation of geoscientific and professional associations that represents more than 250,000 geologists, geophysicists and other earth scientists. Founded in 1948, AGI provides information
services to geoscientists, serves as a voice of shared interests in the profession, plays a major role in strengthening geoscience education, and strives to increase public awareness of the vital role the geosciences play in society’s use of resources, resiliency to natural hazards, and interaction with the environment.

The American Geosciences Institute represents and serves the geoscience community by providing collaborative leadership and information to connect Earth, science, and people.
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 tbrown@gtenvironmental.com.