



MICHIGAN SECTION AIPG NEWSLETTER

Michigan Newsletter



IN THIS ISSUE

From the President's Desk

by Tim Woodburne, CPG

I am both honored and excited to serve as Michigan Section AIPG President for 2018. Nationally AIPG has a total of 36 sections, and the Michigan Section is one of the strongest with approximately 550 Members! The Section Executive Committee does a lot for our members, including putting on field trips, the summer workshop, quarterly meetings, student scholarships, etc. As a result, our members like to participate in many of the events we have. We hope that our membership will continue to increase because I believe that as complex geological issues arise more geologists will be needed to help find reasonable solutions that work for everyone.

We have an exciting year ahead. In 2018, I will be working with the executive committee and our membership on the priorities started during the last few years. I want to emphasize how great the executive committee is – they put in a lot of their own time into the Section to make it as strong as it is. Below is a summary of some of the upcoming events:

- We will continue to host four section meetings this year. The first topic to be about the geology of Michigan. Upcoming topics of presentation include mining in Michigan,

site(s) of environmental contamination, and emerging issues in our profession.

- The golf outing will be held on May 15th and is an important fundraiser for the Section. We appreciate and encourage your support!

- The 8th Annual Summer Workshop will be held June 12 and 13, and will focus on Emerging Contaminants.

- A Summer Field Trip will be offered in early August to a location in the Upper Peninsula – the location and itinerary of the field trip are still being planned.

- The Section Executive Committee continues to support our students; Scholarships, free attendance to our meetings, and annual poster contest will all be offered again this year.

- We currently have student chapters at Central Michigan University, Eastern Michigan University, Michigan Tech University, Wayne State University, and Western Michigan University. We hope to add additional student chapters in 2018.

Article continues on Page 6...



Michigan Section Annual Meeting

The November 30, 2017 Annual Michigan Section meeting was well attended! Over 100 attendees enjoyed a technical presentation by the MDEQ at Weber's Inn in Ann Arbor. Awards were presented to numerous members.



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New Student Chapter News!

The Michigan Section now has five student chapters. See what the new Michigan Technological University student chapter is up to.

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-- Continued from Page 1 --

Finally, the Michigan Section exists to support the work of our membership to promote the geosciences profession. Our Section is part of a larger group of geologists nationally. I look forward helping to promote the principles AIPG stands for including professional responsibility, integrity, public service, competence, and ethical conduct. With your help, 2018 should be a great year.

Support Our Sponsors!

The Section Executive Committee would like to remind its members to support the companies advertising in the newsletter. Consider working with these companies, and when you speak with their representatives, let them know that you saw their ad in the Michigan Section newsletter.

November Meeting Summary

The Section held its annual meeting at Weber's Inn in Ann Arbor on November 30, 2017. The featured speaker was Matt Williams of the MDEQ, who discussed "The Science on Using the USDA Soil Classification for the Volatilization to Indoor Air Pathway."



Several of the Michigan Section's student members enjoying dinner and the meeting. Photo courtesy of David Adler.

This meeting was a celebration of the Michigan Section's 40th year, and was free for all members to attend. Attendees received a free meal and a commemorative t-shirt.



Michigan Section members enjoying good conversation during dinner. Photo courtesy of David Adler.

Adam Heft brought his Rocks of Michigan display, with a few new additions to it since the last time it was exhibited. The annual student poster contest was arranged for the student attendees. Once again, we had good participation from students, with 10 student posters in both the graduate and undergraduate categories; this level of participation by our students has surpassed the participation at the National Annual Meeting held in Nashville. Good job students!



Vice President Tim Woodburne (left) presenting 35 year longevity awards to attending members Ty Black, Ed Everett, and Larry Austin. Photo courtesy of David Adler.

Longevity awards were given to attending members, with certificates provided to members having reached milestones of five, 10, 15, 20, 25, and 30 years. The five members (three of whom attended the meeting) that reached 35 years (Jon Ercole, Larry Austin, Bob Hayes, Ed Everett, and Ty Black) each received a plaque. For all our members, thank you for your continued support of the Michigan Section!



National President Adam Heft (left) with student poster contest winners Conor Cain, Danielle DeWeerd, Matthew Hemenway, and Sarah VanderMeer. Photo courtesy of David Adler.

Member Input Sought

The Section Executive Committee is seeking input from members on a variety of topics. Do you have any suggestions regarding speakers/presentation topics that you would like to hear? What about field trips or other events? Some place you'd like to see us go, or something you think the membership would enjoy doing? Then make your voice heard; please send your suggestions to one of the

members of the Executive Committee; any of the six members would be glad to hear from you. AIPG is your organization. Please help keep it relevant and interesting for all by participating.

Regulatory Roundup

What's the latest news from the capitol? We encourage you to stay informed and get involved. There were several bills introduced in 2017 to just amend Michigan's Natural Resources and Environmental Protection Act, PA 451 of 1994, as amended and several are amending the Safe Drinking Water Act and the Gas Safety Standards. Many new rules are also proposed including the new rule just promulgated setting criteria standards for perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS). We have the ability to inform policy makers and shape policies affecting our profession.

It is important as professionals in the environmental industry to stay up to date on legislative changes and progress and to speak up and be heard when you have expertise to lend or a concern about the issue.

We have changed the format of the Regulatory Roundup in an effort to streamline the information and improve the readability of the document. We have provided quick links to the rules and bill search capability so that you may customize the information that you are seeking. For example, if you are interested in searching for bills that have been proposed in 2017 to amend Michigan's Natural Resources and Environmental Protection Act, just click on the bill search button below with the act's name and type in 451 of 1994 in the search fields provided. All bills that have been introduced will appear.

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MTU Student Chapter News



The Michigan Section now has five Student Chapters with the recent addition of the Student Chapter at Michigan Technological University (MTU). The

MTU Student Chapter Executive Committee includes: Andrew Dubay, Chapter President; Michael Schienke, Vice-President; Jessalyn Taylor, Treasurer; Katie Kring, Secretary; Dr. Chad Deering, Faculty Sponsor; and Dave Adler, Chapter Sponsor. The Chapter was formally chartered by AIPG on October 9, 2017.

Chapter activities had been underway by then, in conjunction with the MTU Geology Club. On September 16, the MTU Student Chapter took a field trip to some historic copper mining sites in Keweenaw County including Central Mine, the Eagle Harbor Lighthouse Complex, and Cliff Mine. The field trip was led by Dr. Bill Rose, MTU Research Professor, and Larry Molloy, noted author, historian and President of the Keweenaw County Historical Society (KCHS). Many thanks to Bill and Larry.

Central Mine was a successful and profitable copper mine from the mid-1850s to the early 1890s. The town of Central that grew up around the mine was home to approximately 1300 people in its heyday. Central is now being preserved and restored by the KCHS, which also maintains the Eagle Harbor Lighthouse Complex and the still-active 1871 lighthouse that's operated by the U.S. Coast Guard. Cliff Mine (1845) was the first mechanized copper mine in Michigan, and produced over 38,000,000 lbs. of refined copper over a 40-year period.



Dr. Bill Rose Discussing the Geology and Geomorphology of Eagle Harbor (September 16, 2017). Photo courtesy of David Adler.

In October, the MTU Student Chapter toured the Adventure Mine in Ontonagon County that operated at various times from 1850 to 1920. The tour included descending 80 feet in a rappelling harness and gear to a lower level

of the mine. They also visited the Taylor and Champion iron mines for rock and mineral collecting. On November 1, the Chapter held its official kick-off meeting at MTU, attended by the Faculty Sponsor and Chapter Sponsor. The Chapter Sponsor also held individual sessions with students to assist them with their career paths, resume preparation, and job interviews. In December, the Student Chapter and the Geology Club held a successful mineral sale to raise funds for future field trips and other activities.



MTU Student Chapter Members and Sponsors at Chapter Meeting (November 1, 2017). Photo courtesy of David Adler.

MTU has a strong Geosciences program, offering degrees in Geology, Geological Engineering, Applied Geophysics and Mining Engineering through the Geological and Mining Engineering and Sciences Department. Originally the Michigan Mining School, MTU was the country's first school for mining engineers, in response to the country's first mining rush. The Michigan Section is

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both proud and pleased to welcome the MTU Student Chapter.

Welcome New Members

The Michigan Section is continuing to grow. Please welcome the following new CPGs, Professional Members, Young Professional Members, Associate Members, and Students:

Nancy Grant, AS-0154; Jacob Cadle, MEM-2933; Curt Chapman, MEM-2912; Paul French, MEM-2923; Derrick Lingle, MEM-2924; Kevin Seisel, MEM-2934; David Warwick, MEM-2925; Adam Wrubel, MEM-2886; Quelyn Bekkering, SA-8928; Will Bender, SA-8691; Daniel Blakemore, SA-8627; Jacob Borowiak, SA-8861; Cody Boynton, SA-8896; Stephanie Buglione, SA-8659; Connor Cain, SA-8974; Aaron Collins, SA-8862; Matthew D'Addona, SA-8557; Chelsea DeBoutte, SA-8665; Anthony Deciechi, SA-8902; Danielle DeWeerd, SA-8933; Krystyna Doran, SA-8657; Andrew Dubai, SA-8661; Kelly Edwards, SA-8897; Charles Ewing, SA-8399; Maximilian Fraleigh, SA-8690; Esayas Gebremichael, SA-8809; Rebecca Hamel, SA-8863; Kammie Hauger, SA-8405; Ross Helmer, SA-8369; Kelsey Hewett, SA-8977; Alexander Hoinville, SA-8921; Shlomo Honig, SA-8922; Nick Howery, SA-8898; Sadie Huggler, SA-8447; Hannah

Jackson, SA-8994; Katelyn Kring, SA-8652; Logan LaCross, SA-8524; Olivia Latic, SA-8450; Sara Leon, SA-8716; Charles Malosh, SA-8593; Leah Marr, SA-8574; Jennifer Nelson, SA-8949; Emily Nowacki, SA-8563; Jaclyn Oliver, SA-8478; Liam Peterson, SA-8660; Morgan Powers, SA-8640; Joseph Rapp, SA-8577; Brooke Roethlisberger, SA-8592; Brandy Schultz, SA-8756; Steve Smith, SA-8984; Lindsey Stone, SA-8462; Chelsea Thibodeau, SA-8495; Audrey Trainor, SA-8986; Meredith Tulloch, SA-8696; Prescott Vayda, SA-8637; Chelsea Veryser, SA-8689; Hannah Weeks, SA-8901; Danielle Wilcox, SA-8697; Daniel Wilde II, SA-8682; Alexis Wildfong, SA-8467; Lisette Wittbrodt, SA-8900; Gabriel Zeidan, SA-8584; and Melanie Zondag, SA-8899.

To each of our new members, the Michigan Section Executive Committee would like to welcome you to our Section, and encourage you to attend Section meetings and other events. You are also welcome to provide information for the Member's Corner articles.

Where in Michigan? Contest

The October 2017 edition of the newsletter featured a photograph of Horseshoe Harbor north of Copper Harbor; the rock is the

Copper Harbor Conglomerate. Bob Mahin of the Lundin Mining correctly identified the photograph.

This edition features a new photograph at the top of the first page. The first person to correctly identify what the photograph depicts (feature name, location, and formation) will win AIPG swag! Submit your entry to the Editor; only one per person per issue please.

2018 Section Secretary Election Results

Election results are in for the Section's new secretary! This year's candidates were Mellisa (Powers) Taylor and Bill Mitchell. Votes continued to come in right up to a few hours before the deadline. After tallying the votes, Bill was announced as the Section's new Secretary for 2018. If you haven't already, please congratulate him. Thank you to both candidates for stepping up and running for the executive committee.

Did You Know?

This article is a new feature of the newsletter and is intended to remind members of various aspects of AIPG and benefits of membership. If there is something you would like to see

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featured in this column, please contact the Editor...

According to the Section 2.2 of the AIPG Bylaws, "The categories of Members shall be: Certified Professional Geologist (CPG), Nationally Accredited Professional Geologist (NAPG), Honorary Member, Professional Member, Young Professional Member, Emeritus Member, and Non-Practicing Member."

Section 2.3.6 states, "A Certified Member may be designated "Emeritus" upon request at the age of 65 or older, provided that the Member is no longer actively engaged in the practice of geology for financial gain on a full-time basis. An Emeritus Member may be paid for the occasional professional opinion. The Executive Committee shall have the authority to reduce or waive dues payments for Emeritus Members, individually or as a category."

Section 2.3.7 states, "Professional Members may be designated "Non-Practicing" upon request at the age of 65 or older, provided that the Member is no longer actively engaged in the practice of geology for financial gain. Those Members who had requested and received "Non-Practicing"

status prior to June 24, 2017 and who were not yet 65 will retain their "Non-Practicing" Member status. The Executive Committee shall have the authority to reduce or waive dues payments for Emeritus Members, individually or as a category."

Membership Reminder!

AIPG dues were due on January 1, 2018. Members that have not paid as of February 15, 2018 will be suspended, and a \$20 late fee is required for payments after that time. Please pay your dues before then to avoid suspension!

Newsletter Notice via E-mail

Please be sure that you continue to receive the Section newsletters and other announcements. Submit an updated e-mail address to Adam Heft at adam.heft@wsp.com. If you move or change places of employment, don't forget to send your new contact information to both the Section and to National. If you are not receiving announcements directly from the Editor, it is because your email address is not up to date.

Michigan Department of Environmental Quality News

New Drinking Water Criteria for PFOA and PFOS

The Michigan Department of Environmental Quality (MDEQ) has developed drinking water criterion for perfluorooctanoic acid (PFOA) [CAS # 335-67-1] and perfluorooctanesulfonic acid (PFOS) [CAS # 1763-23-1]. The [residential and nonresidential drinking water criteria](#) are 0.07 µg/L (70 parts per trillion) for the combined concentrations of PFOA and PFOS. This combined criterion took effect January 10, 2018.

Perfluoroalkyl and polyfluoroalkyl substances (PFAS), which include PFOA and PFOS, have been classified by the United States Environmental Protection Agency as emerging contaminants on the national level. PFAS are a class of chemicals historically used in thousands of applications throughout the industrial, food, and textile industries. Typically, they are stable, breaking down very slowly in the environment, and are highly soluble, easily transferring through soil to groundwater. PFAS groundwater and surface water contamination has been identified in

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several locations across Michigan as a result of their use in multiple applications. PFAS are used in firefighting foams, food packaging, cleaning products, and various other products. PFAS are also used by many industries such as plating, tanneries, or clothing manufacturers, where waterproofing may be required or a protective film is needed in a manufacturing process.

The legal basis for development of the generic cleanup criteria is Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, and the Part 201 Administrative Rules. Rule provisions [R 299.6(9) et al] allow the department to determine that a substance not listed in the generic cleanup criteria tables is a hazardous substance using best available information about toxicological and physical-chemical properties of the substance, and to use that information to develop a generic criterion. The new criterion developed pursuant to these rules take effect when published and announced by the MDEQ.

The generic residential and nonresidential drinking water criteria for PFOA and PFOS are not calculated using the algorithms of R 299.10 or the toxicological or chemical-

physical data of R 299.50, consistent with provisions of R 299.6, R 299.10(3) and R 299.34. The PFOA and PFOS drinking water criteria are the health advisory values as presented in the United States Environmental Protection Agency Drinking Water Health Advisories for [Perfluorooctanoic Acid \(PFOA\), EPA 822-R-16-005](#), May 2016 and [Perfluorooctane Sulfonate \(PFOS\), EPA 822-R-16-004](#), May 2016. Compliance with the drinking water criteria requires comparing the sum of the PFOA and PFOS groundwater concentrations to the drinking water criterion of 0.07 µg/L. The drinking water criterion for PFOA and PFOS protect for both short-term developmental and chronic exposures.

The target detection limit (TDL) for PFOA and PFOS is 0.005 µg /L (5 parts per trillion) in water. The TDL will be incorporated into the next revision of the published MDEQ list of Target Detection Limits and designated analytical methods.

Article provided by Sara Pearson, CPG – MDEQ RRD

Section Website Reminders

As you may have noticed, the Michigan Section is building a database of geologic photographs on our website. Please submit photographs that you are willing to share to Adam Heft at adam.heft@wsp.com. Don't forget to include your name and a short explanation of what the photograph depicts. The photographs will be uploaded to the website periodically.

If you have suggestions on other items that should be included on the History page, please let a member of the Section Executive Committee know.

Interesting Geology Links

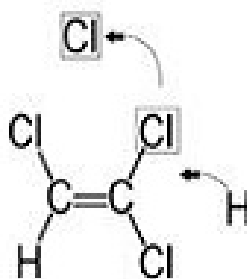
The Editor has received links to various interesting geology-related sites. Some of the more interesting links are included here. If you have any links to geology-related links that you would like to share, please forward them (with a citation, if applicable) to the Editor.

Thanks to Mark Francek of Central Michigan University for sharing via the "Earth Science Site of the Week" emails.

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What Geology Has to Say About Building a 1,000-Mile

Wall: <http://www.smithsonianmag.com/science-nature/vast-geological-challenges-building-border-wall-180962072/>.

IRIS Earthquake Browser: http://www.iris.edu/hq/inclass/software-web-app/iris_earthquake_browser.

Hawaiian Volcano Observatory Photo and Video

Chronology: https://volcanoes.usgs.gov/volcanoes/kilauea/multimedia_chronology.html

Michigan Department of Natural Resources News

The Michigan Department of Natural Resources, Office of Minerals Management has released a Directory of Mineral Producers for the State of Michigan, the first such publication since 1979. This document provides a summary of current non-fuel mineral production within the state and information regarding the economic impact of those mineral products. It also identifies various mineral producers who are active in Michigan. This directory, while published in 2017, is based on 2015 data.

This report can be downloaded at http://www.michigan.gov/documents/dnr/MI_Mineral_Producers_Directory_2017_610716_7.pdf.

Employment Opportunities

To serve our members, and provide added value, the Michigan Section Executive Committee has decided to allow ads for employment or other opportunities to be posted in the Section newsletters. Employment ads will run for one edition unless renewed. There is no cost to our members or sponsors for this service. Send your employment opportunities to the Editor.

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Member's Corner

The Member's Corner includes information about the Section's membership. This is your chance to provide information on where you are and what you are doing. Simply send the information to the Editor for inclusion in this section. This edition features information from our new Section Secretary, Bill Mitchell.

Hello Michigan AIPG! It is winter, one of my favorite times of year! I know I am in the minority. Although winter may not always be conducive to field work or collecting rocks, I always enjoy getting outside this time of year. It is one thing to be outside in the cold working, and another to be outside in the cold playing and doing the things you enjoy. I tease people who like the Fall season, telling them that it is just time to pass between golf and ski seasons. I am a regular out at the local Kalamazoo area ski bump (Timber Ridge), where I may put in portions of 30 to 40 days a season, assuming the weather cooperates. I like nothing better than to get out at opening to beat the crowds, make turns for a few

hours, and hanging out with friends (and then maybe having a refreshment afterwards). In order to get a more peaceful feel for winter, I can always head out to the local trails with my skinny skis. It is hard to beat the quiet and beauty of being out in the woods in the winter. Winter may not be for everyone, but for me it is something to look forward to!

2018 Michigan Section Executive Committee

Here are the current officers of the Michigan Section. Be sure to talk with them at the Section's events when you see them...

roasted vegetable medley, and assorted desserts.

Schedule: Cash Bar 5:30-6:30 PM, Dinner 6:30 PM, and Speaker 7:30-9:00 PM.

Cost: Students free, Members \$30.00, Non-members \$50.00.

RSVP by February 12, 2018: RSVP for the meeting on the Eventbrite website at: <https://www.eventbrite.com/e/aipg-michigan-section-meeting-tickets-42129557641>.

2018 AIPG Michigan Section Executive Committee



Past President
Linda Hensel



President
Tim Woodburne



Vice President
Amy Hoeskema



Treasurer
Sara Pearson



Secretary
Bill Mitchell



Newsletter Editor
Adam Heft

Coming Events

February 13, 2018: Governor's Summit on Extractive Industries, to be held at the Kellogg Center in East Lansing, MI. Additional information is attached to this newsletter.

February 15, 2018: Michigan Section AIPG Meeting, Fetzer Center of Western Michigan University, Kalamazoo. Peter Voice of the Department of Geosciences at Western Michigan University will be speaking about "Geologic Resources of Michigan: A Summary of Historic Production Data."

Dinner: Buffet with tossed green salad with two dressings, homemade coleslaw, baked honey glazed ham, roast turkey with pan gravy and corn bread stuffing, macaroni and cheese, mashed Yukon gold potatoes,

February 23, 2018: Webinar on Technology Options for Groundwater Monitoring Programs, 1 to 4 pm CDT. Webinar put on by Wisconsin Section AIPG; Michigan Section is one of the sponsors. Cost for students is \$5 and for professionals is \$20. Link to online registration is:

<https://www.eventbrite.com/e/webinar-technology-options-for-groundwater-monitoring-programs-tickets-40038969636>. University Center of Central Michigan University, Mt. Pleasant.

April 11, 2018: Michigan Section AIPG Meeting, University Center of Central Michigan University, Mt. Pleasant. Speaker and topic TBA.

April 25, 2018: IL/IN Section Meeting at the Morton Arboretum in Lisle, IL.

May 15, 2018: Michigan Section AIPG Golf Outing, Moose Ridge Golf Course, South Lyon. Details in the attached flyer and on the Section website.

June 12-13, 2018: Annual Michigan Section Technical Workshop – Environmental Risk Assessment: Emerging Contaminants and Pathways: A New Paradigm at the Ralph A. MacMullan Conference Center in Roscommon, MI. Be sure to submit your abstracts; sponsor information is coming soon.

June 16-21, 2018: Resources for Future Generations: Energy – Minerals – Water – Earth. Vancouver, Canada.

September 8-11 2018: 55th Annual AIPG Meeting to be held in Colorado Springs, CO.

September 20, 2018: Michigan Section AIPG Meeting, Kellogg Center of Michigan State University, East Lansing.

November 29, 2018: Michigan Section AIPG Annual Meeting, Weber's Inn, Ann Arbor.

Fall 2019: 56th Annual AIPG Meeting to be held in the Burlington, Vermont; dates TBD.

Fall 2020: 57th Annual AIPG Meeting to be held in Sacramento, California; dates TBD.

Fall 2021: 58th Annual AIPG Meeting to be held in Marquette, Michigan; dates TBD.



Attendees at the November 2017 Section Meeting

Above: Craig Savage and Don Conway.

Right: Dave Adler and Dawn Prell.



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**Michigan Section
American Institute of Professional Geologists
MEETING ANNOUNCEMENT**

February 15, 2018

GEOLOGIC RESOURCES OF MICHIGAN: A SUMMARY OF HISTORIC PRODUCTION DATA

Featured Speaker

[Peter Voice, Ph.D., Department of Geosciences, WMU](#)

Location: Fetzer Center, Western Michigan University, Kalamazoo, MI (Map attached)

Cost: Students Free, Members \$30.00, Non-members \$50.00. Registration is payable electronically via Eventbrite (see link below) or at the door by cash or check; however, prepayment is preferred and speeds up the check-in process at the door. *Please note: Cancellations made within 48 hours of the meeting and/or "No Shows" will be charged and expected to pay the registration fee.*

Dinner: Buffet with tossed green salad with two dressings, homemade coleslaw, baked honey glazed ham, roast turkey with pan gravy and corn bread stuffing, macaroni and cheese, mashed Yukon gold potatoes, roasted vegetable medley, and assorted desserts.

Time: Cash Bar 5:30-6:30 PM, Dinner 6:30 PM, and Speaker 7:30-9:00 PM

RSVP: On the Eventbrite website no later than February 12th at:
Select your meal choice and payment option.

Register Here 

Abstract: The Michigan Geological Survey has generated a summary of historic natural resources production from the mid-1800's to the present. Production statistics were gathered from historic Michigan and U.S. Geological Survey annual reports and other sources. Production curves and summary data tables were generated.

Commodities considered in the survey include metallic resources (iron, copper, gold, silver), non-metallic minerals (salt, rock gypsum), aggregates (sand, clay, crushed rock, etc.), and energy resources (oil, natural gas, and coal). Significant resources include iron ore (1.5 billion metric tons), copper ore (6 million metric tons), salt (300 million metric tons), gypsum (110 million metric tons), sand and gravel (3.2 billion metric tons) and crushed stone (2.1 billion metric tons). Exploitation of energy resources has generated 1.3 billion barrels of oil, 42 million metric tons of coal and 8 trillion cubic feet of natural gas.

Most commodities harvested in Michigan exhibit similar production curves with increasing production from the 1880's to the 1970's. Post-1970 most commodities exhibit declining production. All of the commodities were sensitive to recessions. In 2013 dollars, the estimated value of the historically-produced, geologic resources from Michigan is 560 billion dollars.

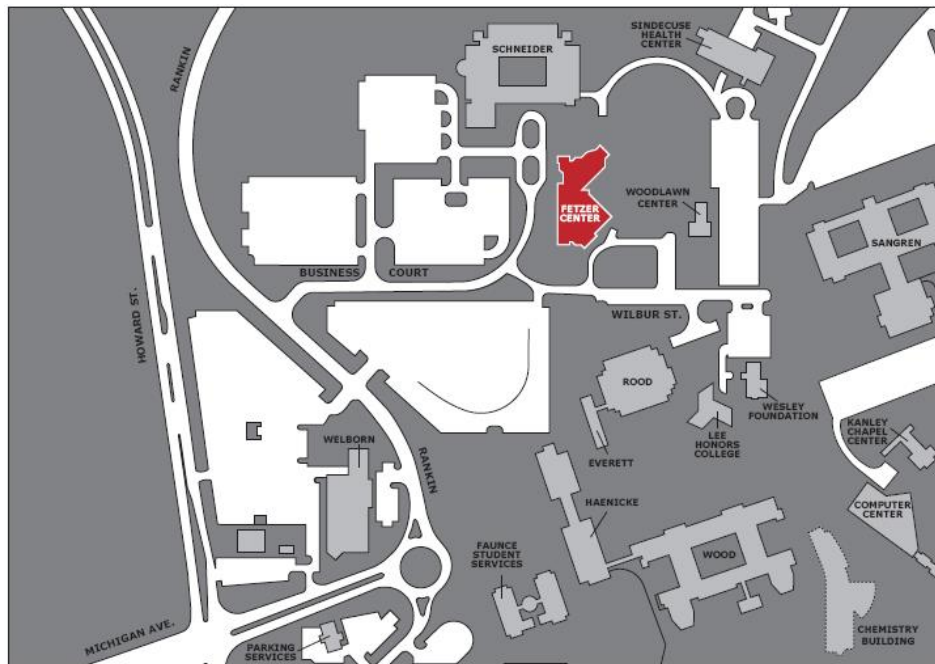
Speaker Bio: Peter Voice, Ph.D., is a faculty Teaching Specialist, Research Associate and Director for K-12 Outreach in the Department of Geosciences and Michigan Geological Survey at Western Michigan University. Dr. Voice has a Ph.D. in Geology from Virginia Tech. He currently works on a variety of projects on Michigan Basin geology. Recent publications include chapters in a GSA Special Paper Volume: "A reevaluation of the Burnt Bluff Group (Llandover, Silurian, Michigan Basin) from subsurface and outcrop data: Development of a time-transgressive depositional model" and "Evaporite facies of the Michigan Basin". He has also prepared a new bibliography on Michigan Geology "Michigan Geological Survey Data Compilation Series Volume 1 - Michigan Geology: A Bibliography". Dr. Voice directs the K-12 Outreach program, CoreKids, which works with between 10,000 and 15,000 children a year.

AIPG Michigan Section Meeting February 15, 2018

**Fetzer Center, Western Michigan University,
2350 Business Ct., Kalamazoo**



WESTERN MICHIGAN UNIVERSITY CAMPUS



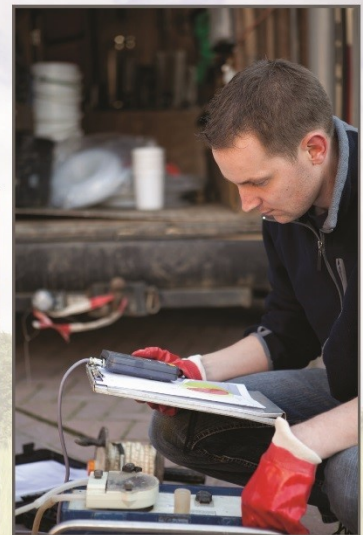


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You are invited

to the



**GOVERNOR'S
SUMMIT ON
EXTRACTIVE
INDUSTRIES**

Tuesday, February 13, 2018
Kellogg Hotel and Conference Center
219 S. Harrison Rd, East Lansing, MI 48823

Michigan's mineral, stone, sand, gravel, crude oil and natural gas industries are a vibrant and little-known part of Michigan. These industries provide jobs for our residents and supply the products we use every day. This summit will provide information and activate discussion about policy, economic development, education and public perception.

Please join us for an active discussion as we work to:

- Increase awareness of the state's extractive industries as valuable building blocks to Michigan's future, including economic benefits to the state's workforce and educational opportunities for students.
- Encourage investment and growth of Michigan's extractive industries through sound, factual, science-based policy development.
- Understand current perceptions of extractive industries, and the challenges and opportunities these industries face.
- Build collaborative partnerships between industries, communities and government.

Keynote speakers for the summit are Michigan Governor Rick Snyder and Anja Manuel, author, "This Brave New World."

Registration is \$50 and includes lunch.

[Agenda and Registration →](#)

14th Annual AIPG Michigan Section Golf Outing

Tuesday May 15, 2018

The 14th Annual AIPG Michigan Section Golf Outing promises to be another successful event. Proceeds generated from the outing benefit the AIPG K-12 Education Grant fund, which provides thousands of dollars to a variety of worthy projects every year. Your generosity has been, and will continue to be the key to enabling organizations/schools to provide meaningful educational programs and activities in the Geosciences.

This event also offers our sponsors exposure to many of the most influential professionals in our industry.

The outing will take place at Moose Ridge Golf Course in South Lyon, Michigan.

Place: Moose Ridge Golf Course
11801 Doane Road
South Lyon, MI 48178

Event: 18-Hole Scramble

Date: May 15, 2018

Registration: 8:00 to 9:15 am

Shotgun Start: 9:30

Rainout Date: May 17, 2018 (based on availability)

Registration

Register/Pay by May 5, \$600/foursome, \$170/Individual
Register/Pay after May 5, \$680/foursome, \$190/Individual

Golfer 1: _____

Golfer 2: _____

Golfer 3: _____

Golfer 4: _____

Accepted forms of payment include:

Eventbrite-search AIPG Michigan

<https://www.eventbrite.com/e/aipg-mi-section-golf-outing-tickets-41703835294?aff=eivtefrnd>



or



Make Checks to:
Michigan Section-AIPG
c/o ERG
28003 Center Oaks Ct., Suite 106
Wixom, Michigan 48393
Attn: Bob Reichenbach bob.reichenbach@ergrp.net

Company: _____

Contact: _____

CALL 248-773-7986, or
FAX 248-924-3108 to reserve your place!
The AIPG-MI Section is a nonprofit
501(c)(6) Organization.

Phone: _____

Email: _____

*Includes: Continental Breakfast, green fees, range balls, Lunch at turn, networking opportunities, and DINNER.
Also includes: 50-50 and Grand Prize raffles along with other prizes including, \$10,000, vacations, or sets of clubs
for a "Hole in One", Putt-4 Dough \$2,500, men's and women's Longest Drive and Closest to Pin contests, and
goodie bags for all participants.*

14th Annual AIPG Michigan Section Golf Outing

Tuesday May 15, 2018

Sponsor Package Information

Executive Copper Sponsor - \$2,500

- **1 foursome** and 33% discount for additional golfers
- Highest Visibility Signage at the Event
- Corporate recognition at the awards presentation

Exclusive Dinner Sponsor- \$2,000

Investment includes:

- **1 foursome** and 33% discount for additional golfers
- Signage at the Dinner
- Corporate recognition

Beverage Sponsors - \$1,000 (2 available)

Investment includes:

- Signage at the club house and on the Beverage Cart or Oasis.
- Corporate recognition

Breakfast/Luncheon Sponsor - \$1,000

Investment includes:

- Signage at the grill/tent.
- Corporate recognition

Hole-in-one Sponsors - \$800 (4 available)

Will have visible exposure on Par 3 Holes.

If a golfer hits a hole-in-one, the prize will be, either \$10,000, a golf vacation or a deluxe set of irons.

Tee Box or Hole/Flag Sponsor - \$280

(18 available)

Investment includes:

- Tee box signage and
- Pin Flag with logo

Skill Sponsors – \$500

Investment includes:

(4 available)

“Longest Drive”, “Closest to Pin” awards to Male/female for each.

Practice Tee Sponsor – \$300

Investment includes:

(1 available)

Exclusive Signage at the Practice Tee

Putt-4-Dough – \$400 Signage on the putting area, corporate* recognition during the event (includes contest coordination at the turn and following golf provided by you). Provides interaction with all participants.

Team Photo Sponsors:

\$500 SPONSOR FEE – Signage and option to provide a photographer from your organization.

Goodie Bag Sponsor - Give-away items for 120 or more golfers