



American Institute of Professional Geologists

Michigan Section

January 2015

From the President's Desk

As 2015 begins, I wish you all a happy and healthy New Year! I look forward to continuing my service with the Section's Executive Committee and to an eventful 2015. Working with AIPG has been a great experience and I anticipate 2015 will prove even more rewarding. I would also like to welcome Tim Woodburne to the Executive Committee once again. He will serve on the committee from 2015 through 2019. Welcome Tim!

The Executive Committee has been working hard, and we have several exciting events planned for 2015. Please read through the newsletter and put a few of them on your calendar! Our largest event and most popular is the technical workshop to be held in June. Special thanks to Sara Pearson and Rick Dunkin for taking the lead on this event. Last year's event was well attended, informative and of great value to those in attendance. We anticipate more of the same in 2015. If you are interested in being part of the planning committee for this event, please contact a member of the executive committee.

One of the primary goals we have as a Section is to grow our student sections and increase participation with the students. They are the future of our profession. We are in the early stages of planning a field demonstration event in conjunction with Western Michigan University's hydrogeology field camp. With the generous donation from AIPG sponsor, Stock Drilling, Inc., we are hoping to provide a drilling demonstration that will include installation of monitoring wells that can be used for pump test analyses by students across the state.

I have confidence that AIPG, as an organization, will continue to grow and that Section members will step up each year to volunteer for leadership roles and support the profession. I look forward to meeting new members and working closely with all of you.

Dawn Prell, CPG – 2015 Michigan Section President

Section Officers Reports

President: Information presented in the "From the President's Desk" article above.

Vice President (Brian Burke): As Vice President, I'm looking forward to serving the Section and incoming President, Dawn Prell, in 2015. Behind the scenes, Dawn did a terrific job assisting Craig Savage last year, so I have my work cut out for me. I also want to express my appreciation to past President Craig Savage for his successful term as President in 2014. I read his thought provoking articles in the newsletter with great interest and enjoyed working with him on the conference planning committee. During these first several months, I will be wrapping up business as Treasurer and I plan on a seamless transition to Linda Hensel, this year's Treasurer. As most of you know, I will be serving as the Section's delegate to the Annual Meeting in Alaska this September. I will do my best to represent the Section's interests and as time permits, attend some of the field trips. I'll take plenty of photos and report back to all of you. As always, your input is critical for the Section's continued success. Let's work together to make 2015 a great success.

Treasurer (Linda Hensel): No report.

Secretary (Tim Woodburne): Thank you for selecting me as Secretary of the Michigan Section of AIPG for 2015. The AIPG Michigan Section has been important to me on a professional level, as well as a personal level, as I have made many friends in this group. I served as Section Secretary back in 2005 and it is interesting to see the changes and the respectable growth of this organization. My belief is that AIPG is important to all of us as it advocates on behalf of our profession through quarterly meetings, field trips, the Student Sections, as well as the golf outings, summer Workshop, and the National Meeting. I am looking forward to working hard and doing the best job possible for AIPG.

I am looking forward to meeting as many of you as I can.

Past President (Craig Savage): No report.

Coming Events

January 23, 2015: Ohio Geological Society 17th Annual Winter Gala. The event will be held at the Holiday Inn Columbus-Worthington at 7007 N. High Street, Worthington, Ohio 43085. The cost is \$25 per person. Additional information and registration online at: <https://ohiogeosoc.org/events/ogsgala1-23-15>.

March 27, 2015: Michigan Section AIPG Meeting, Detroit Historical Museum, Detroit. Hal Fitch of the MDEQ will be speaking about "Hydraulic Fracturing in Oil and Gas Development."

Location: Detroit Historical Museum, Detroit.

Dinner: Strolling Dinner will include Michigan Themed Food Stations: D-Town Station: BBQ shredded pork sliders, Portabello mushroom sliders, Michigan Cole Slaw, Mini Coney Dogs, Potato Chips; Greek Town Station: Mediterranean Platter with Hummus, Tabbouleh, Greek Olives, Baby Carrots, Pepperocini, Falafel, Stuffed Green Leaves and Feta Cheese Served with Pita Bread; Mexican Town: Create your own Nacho's and Tacos with Shredded chicken, Refried beans, guacamole, salsa, cheese, sour cream, Black bean and corn salad, Queso fundito with Chorizo, Flour tortilla and corn chips; Dessert - Ice cream sundae bar, Floats with Faygo root beer and Vernors.

Schedule: Band, Bar (Registrants get two free drink tickets) and Strolling Dinner 5:30-7:00 PM, Speaker 7:00-9:00 PM; Museum will remain open until 11:00 PM.

Cost: Students \$30, Alumni/Faculty \$40, Members \$50.00, Non-members \$70.00.

RSVP by March 24, 2015: RSVP for the meeting on the Eventbrite website no later than March 24th at: <https://www.eventbrite.com/e/aipg-michiganwsu-student-chapter-special-event-section-meeting-tickets-12752383723>.

June 16-17, 2015: Michigan Section 5th Annual Technical Workshop – Site Characterization to be held at the Ralph A. MacMullen Conference Center in Roscommon, Michigan. Save the Date!

September 19-22, 2015: 52nd Annual AIPG Meeting to be held in Anchorage, Alaska. Details available on the National AIPG website www.aipg.org.

2015 Golf Outing – Save the Date!

It is not too early to begin planning for our 11th Annual AIPG Golf Outing. Please spread the word to your suppliers/colleagues, and participate in this event which takes place on Tuesday May 19, 2015 at Lyon Oaks Golf Course in Wixom, MI.

This event is a great opportunity to spend time with colleagues and celebrate the return of warm weather to Michigan. It is open to everybody, so please come and take advantage of the opportunity. You don't need to be an avid golfer to participate. This is a fundraiser with an emphasis on fun.

The money raised goes to the Michigan Section's K-12 Educational Grant recipients. To ensure continued success, please join us by participating, sponsoring, soliciting sponsors, and/or donating prizes or items. Call me at 248-773-7986 or e-mail bob.reichenbach@ergrp.net for registration or sponsorship information.

The registration and sponsorship form is included in this newsletter and has been posted to the Michigan Section's website. Click on "Golf Outing". Forms can be e-mailed, or faxed to me at (248) 924-3108. We hope to see you May 19.

Bob Reichenbach - Golf Outing Chairman

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.

December Section Meeting Recap

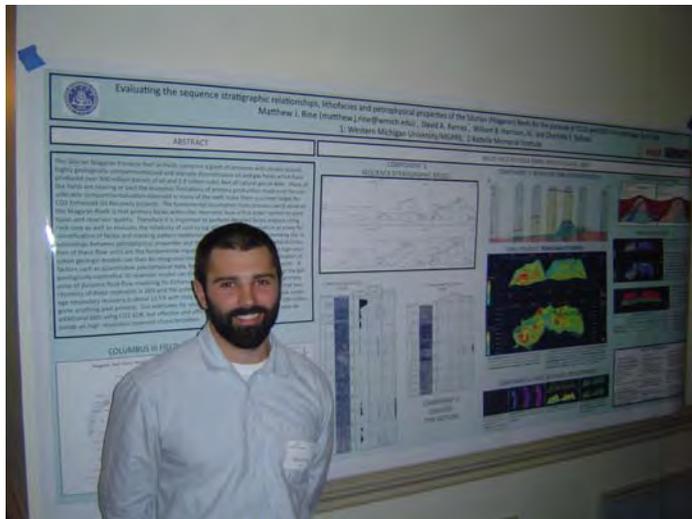
The Michigan Section held its annual meeting on December 11, 2014 at Polo Fields East LLC in Ann Arbor. This was a new venue for the Section, and it worked out well. There are several items of note from the meeting.



Jim Brode presenting his talk. Photograph courtesy of Adam Heft.

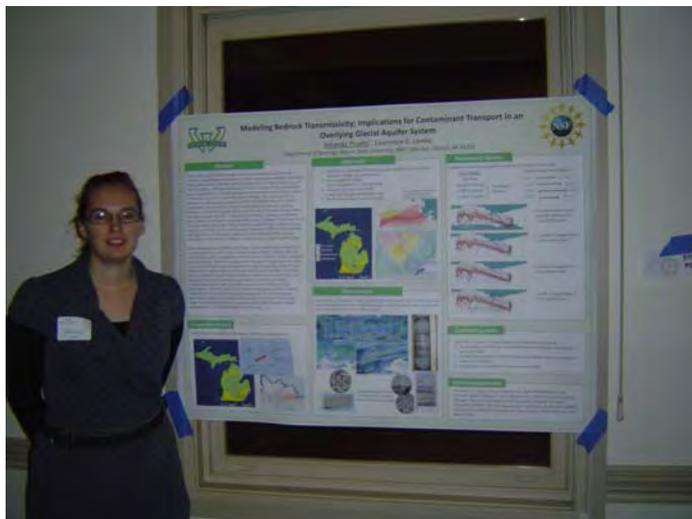
Jim Brode presented a very interesting talk on "A 30 Year Perspective of a Large-Scale Groundwater Remediation Project: A Case History of Pall/Gelman Site in Ann Arbor (Scio Township), Michigan."

A total of 64 individuals registered for the meeting, including several students. Six of the students brought posters and entered the Student Poster Contest.



Matthew Rhine and the winning graduate category poster. Photograph courtesy of Adam Heft.

The winner of the undergraduate poster category was Connor VanDiver with the poster “Tourmaline Chemistry and the Flexible *B*-site.” The undergraduate runner up was Nicholas Guiffre with the poster “Exploring the Association of Massive Pegmatites and Supervolcanoes.”

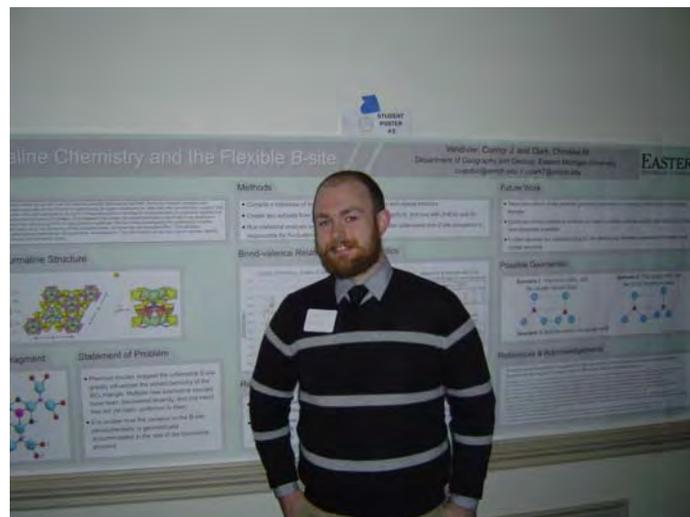


Amanda Pruehs and the runner up graduate category poster. Photograph courtesy of Adam Heft.

The winner of the graduate poster category was Matthew Rhine with the poster “Evaluating the Sequence Stratigraphic Relationships, Lithofacies and Petrophysical Properties of the Silurian (Niagaran) Reefs for the Purpose of CCUS and EOR in the Michigan Basin, USA.” The graduate runner up was Amanda Pruehs with the poster “Modeling Bedrock Transmissivity; Implications for Contaminant Transport in an Overlying Glacial Aquifer System.

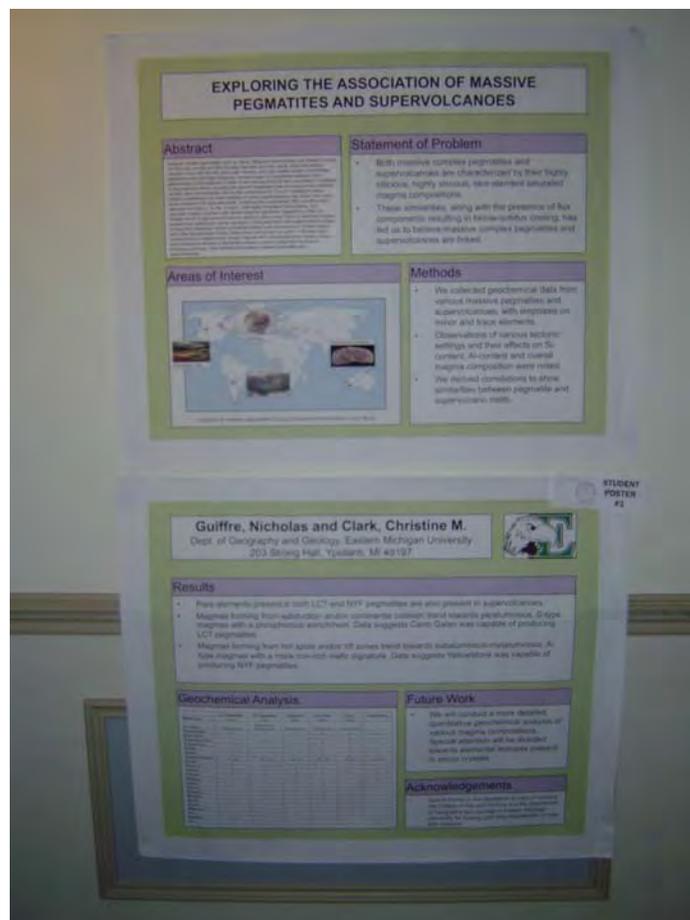
Longevity awards were given to those in attendance for 10, 15, 20, 25, 30, or 35 years of membership in

the Michigan Section. Certificates for those not in attendance will be mailed.



Connor Vandiver and the winning undergraduate category poster. Photograph courtesy of Adam Heft.

Tim Woodburne was announced as having won the 2015 Section Secretary election (by only one vote!). Please congratulate Tim as he starts his term as a Section officer.



The runner up undergraduate category poster; Nicholas Guiffre not pictured. Photograph courtesy of Adam Heft.

Adam Heft brought his Rocks of Michigan exhibit; it was only the third time the exhibit had been displayed. Numerous new formations samples had

been added to the exhibit since the last time it was displayed.

Michigan Department of Environmental Quality News

EPA Praises Michigan's LUST Triage Program

Michigan received high praise for the Leaking Underground Storage Tank (LUST) Triage Program at the US Environmental Protection Agency (EPA) Region V All States Meeting.

The All States Meeting is an annual meeting where representatives from the six states, Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin, and 35 tribes meet with Region V staff. The meeting serves as a forum for EPA to provide budget and funding updates, news on initiatives and issues, and for the states to share information about their UST and LUST programs.

Michigan Department of Environmental Quality (MDEQ) Remediation and Redevelopment Division (RRD) staff Joan Park and Randy Rothe attended the last meeting in August and presented the Triage program. Rothe, DEQ's Triage Contract Manager, gave an overview of the program and how it has been working in Michigan.

He described how a \$2.4 million dollar investment by the MDEQ resulted in an evaluation of 298 LUST sites across the state that included access negotiation, geophysical surveys, soil and groundwater sampling and analyses, and risk assessment in just one year. At a cost of less than \$10,000 per site, the MDEQ expects the closure of nearly 40 percent of those investigated. Fifty percent of the sites required some additional work to mitigate the risks that should be addressed in the future. The remaining sites had releases that posed an immediate threat where action needed to be taken promptly to manage the risk. This program has grown over the past few years starting with investigations of approximately 40 sites annually to 208 in 2013 to the 298 in 2014 and more sites are being nominated for 2015.

Thanks to this program, there are 199 properties with closed releases ready for redevelopment. They also have information readily available for a new property owner to conduct a Baseline Environmental Assessment which increases their marketability.

After giving the presentation, Rothe said he received a lot of interest in the program and encouragement from EPA staff. EPA staff were impressed with how the triage program has helped Michigan successfully reduce the backlog of open sites. They were also interested in how a triage program like this could

benefit other states and how EPA could use a program like this.

Tom Walker, EPA Regional Liaison for the Office of Underground Storage Tanks, commented, "I really enjoyed your presentation. It's initiatives (programs) like this that management here love to hear about." Walker further indicated that he would be sharing Michigan's Triage program with all regions at the national meeting.

EPA's Region V Tribal lead for the LUST and Corrective Action program, Bob Egan, also expressed interest in the program for sites located on tribal lands. He requested copies of letters, access agreements, and the program presentation and will be giving implementation of a triage program serious consideration.

A triage program like this has not been implemented in other states, and the EPA recognizes Michigan's leadership.

Minnesota has reported making efforts to conduct file reviews of sites with releases older than 10 years to determine whether the corrective action is appropriate, more work needs to be done, or the site is ready for closure. Minnesota's representative indicated that they concentrated this effort on 200 sites. The Minnesota program did not include field investigation.

Public Act 416 Creates Underground Storage Tank Corrective Action Fund

Governor Snyder signed into law Public Act 416 on December 30, 2014 creating a new authority for funding corrective actions for leaking underground storage tank sites. MDEQ's top priority is to get this authority established and the reimbursement program running.

Public Act 542 Amends Part 201 Environmental Remediation Regulations

Highlights of the amendments include a definition of the term "source," additional clarification on background concentration, and new institutional controls language among other modifications.

Sara Pearson, MDEQ Technical and Program Support Team Coordinator, CPG #10650

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.

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 heft@pbworld.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.

Section Website Reminders

As you may have noticed, the Michigan Section is working on building a database of geologic photographs on our website. We would like to continue building this collection. Please submit photographs that you are willing to share to Adam Heft at heft@pbworld.com. Don't forget to include your name and a short explanation of what the photograph depicts. The photographs will be periodically uploaded to the website once several have been received.

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.

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.

I thought I would write in the Member's Corner as a way to let you know about me as your new Secretary. I can remember the first time I wondered about rocks and what was in them. I was around the kindergarten age. My family lived in Colorado Springs for about one year. One day my parents took my brother and me to a gold mine as part of a hike. There we looked at the tailings and we were allowed to take some rocks back. I thought I could actually see the gold in the rocks. The gold in the rocks looked like tiny specs. Now looking back on it and knowing what we know, it was probably fool's gold. But it got my imagination started. While there in Colorado, I learned to ski.

I started really learning about geology by taking courses at Albion College. I had very good professors there who were encouraging and very knowledgeable. I enjoyed the field trips and eventually signed up as a major in geology. At the time, I also had a strong desire to speak a foreign language so I was also a French major, which allowed me to live and travel in France for one semester.

After graduation from Albion College in 1989, I went on to graduate school at Michigan State University. I studied volcanoes, specifically the Long Valley Caldera's moat basalts and completed a master's degree. During the summer of 1991, between the first and second year of graduate school, I worked for Chevron Corporation in the New Orleans area as a summer hire geologist. There I mapped prospects associated with creep faults in the Gulf of Mexico. I achieved a master's degree from Michigan State University in 1992.

I have been at Prein&Newhof, a civil and environmental engineering firm in Grand Rapids, Michigan, since 1993. My work here consists of a mix of environmental due diligence projects, Phase I ESAs, BEA's and Due Care, LUST investigations, reporting and other environmental investigations of contaminated property. There are a few sites that I have been working on since being hired here, which is amazing to think about, but I bet there are several of you who also have similar sites.

Personally, I have three children – two are in high school now and one has recently completed college in only 3.5 years and is contemplating graduate school. During times of relaxation and not contemplating complex geological problems, I enjoy running and training for long distance races. For 2015 I have signed up for Hurt the Dirt, a trail half marathon, the River Bank Run, a 25 Km race in Grand Rapids, and the Bayshore Marathon located in Traverse City. I also enjoy travelling to as many places as I can, downhill skiing, working in my yard, and going to the beach, to name a few.

Let's make the most and the best of our time together in AIPG!

Tim Woodburne, CPG

Employment Opportunities/Seeking Employment/Member 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.

No employment opportunities or seeking employment ads were received by the Editor prior to issuing this edition of the newsletter.

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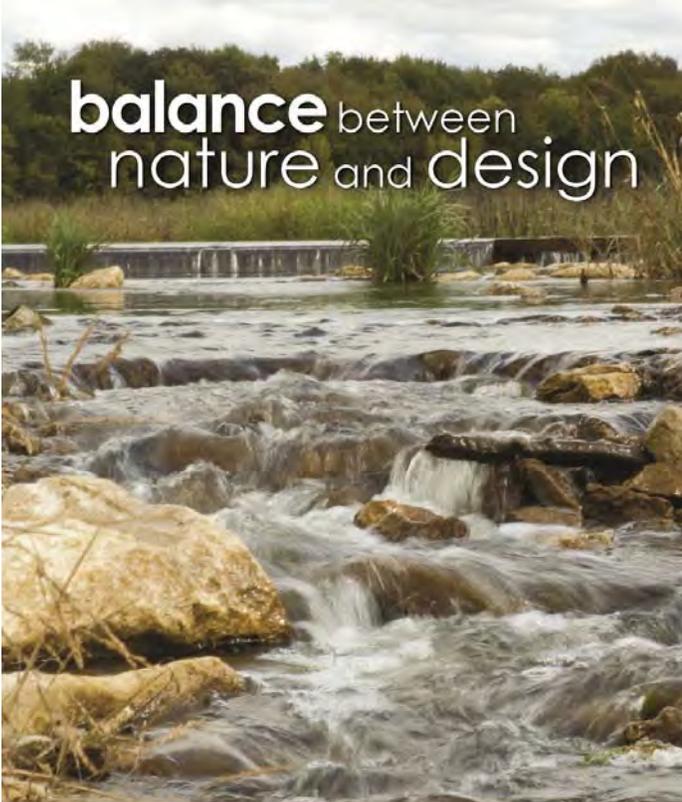
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1:00 p.m.–1:30 p.m.

A New Paradigm for GSI Pathway Compliance & Putting 10 “Options” into Perspective

Presented by: Gary Klepper and Jennifer Quigley

3:30 p.m.–4:00 p.m.

**Pore Water Characteristics as Indicators of Venting Groundwater and
Depth-Integrated Water Column Sampling (Kalamazoo River)**

Presented by: Gary Klepper and Michael Coram

Wednesday, June 18

4:00 p.m.

GSI Q&A and Viewpoints (Panel Discussion)

Presented by: Gary Klepper (CRA), Jason Lagowski (Arcadis),
Grant Trigger (Racer Trust), Bob Wagner (DEQ-RRD)

Conestoga-Rovers & Associates (CRA) has been providing comprehensive engineering, environmental consulting, construction, and information technology (IT) services since 1976. CRA provides practical, innovative, and effective services in such areas as environmental site assessment and remediation, vapor intrusion assessment, mitigation, risk assessment, environmental data management, regulatory compliance and permitting, environmental health and safety, solid and hazardous waste management, and air quality management. CRA is pleased to be participating at the GSI Characterization, Evaluation, and Compliance workshop at the Ram Center. Please visit our exhibit booth to learn more about CRA's array of services. We look forward to meeting you!

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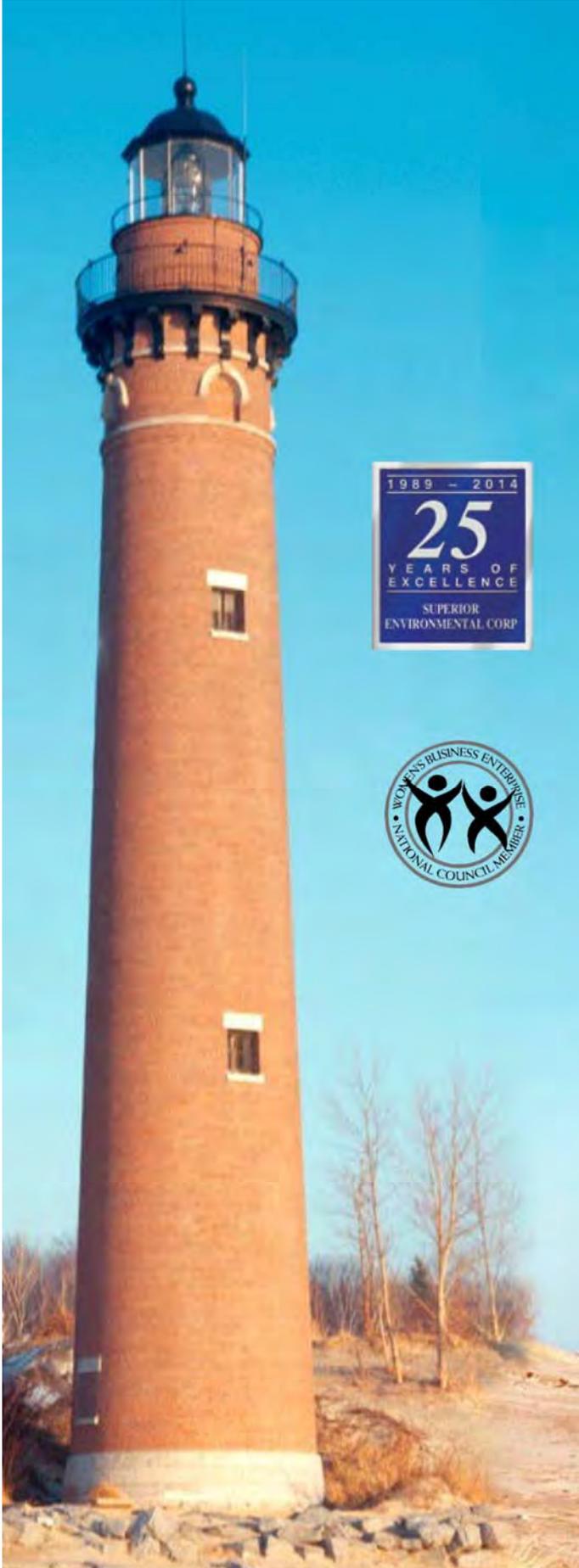
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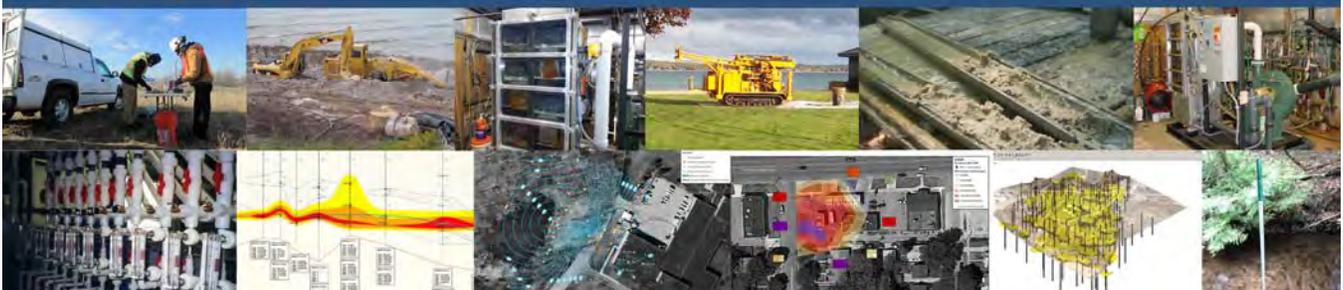
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who we are and what we do

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11th Annual AIPG Michigan Section Golf Outing

Tuesday May 19, 2015

Sponsor Information

Exclusive Dinner Sponsor- \$1,800

Investment includes:

- 1 foursome
- Highest Visibility Signage at the Event
- Corporate recognition*

Beverage Sponsors - \$700 (2)

Investment includes:

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

Luncheon Sponsor - \$800

Investment includes:

- Signage at the grill/tent.
- Corporate recognition*

Hole-in-one Sponsors - \$500 (4)

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 Sponsor - \$200

(18) Available

Investment includes:

- Tee box signage

Skill Sponsors – \$500

Investment includes:

(4) Available

"Longest Drive" "Closest to Pin" awards to Male/female for each.

Putt-4-Dough – \$600 Signage on the putting area, corporate* recognition during the event (includes contest coordination at the turn and following golf provided by you).

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

*Dinner and Beverage Cart/Oasis Sponsors will receive AIPG membership. All sponsors will be recognized in the Quarterly News letter and on the Michigan Section Web Site.

Practice Tee Sponsor - \$400

(1) Available

Investment includes:

- Practice Tee/Range signage

Door Prize Sponsors - \$100 cash or 2 prizes with \$50 value minimum.

Logo on signage at prize table. Corporate recognition.

This event is our annual Fund Raiser. The Michigan Section of AIPG Golf fundraiser benefits the Michigan Section's ability to support K-12 education grants and scholarships.

Place: Lyon Oaks Golf Course

Event: 18-hole Scramble

Date: May 19, 2015 Tuesday

Registration: 8:00 to 9:30 AM

Tee Time: 9:30 AM

Rainout Date: May 21, 2015 (based on course availability).

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, \$20 gas cards to the four golfers traveling the furthest and goodie bag for all golfers.

Registration

Individual = \$180 if paid by April 1, \$200 thereafter

Foursome = \$600 if paid by April 1 \$680 thereafter

Player One: _____

Player Two: _____

Player Three: _____

Player Four: _____

Contact Name, Company and Phone Number for your Foursome:

Accepted forms of payment include:
Eventbrite



or

Make Checks to:

Michigan Section-AIPG

c/o ERG

28003 Center Oaks Ct., Suite 106

Wixom, Michigan 48393

Attn: Bob Reichenbach bob.reichenbach@ergp.net

CALL 248-773-7986 or FAX 248-924-3108 to reserve your place!

The AIPG-MI Section is a nonprofit 501(c)(6) Organization

11th Annual AIPG Michigan Section Golf Outing Tuesday May 19, 2015



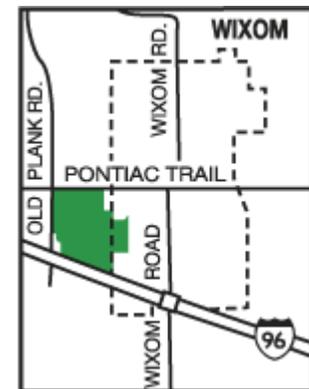
Arthur Hills-designed 18-hole course on 230 acres

- "Up North" feel in southwest Oakland County
- Par-72 championship golf course
- Hardwood forests and wetlands enhance natural golfing experience
- "Nature, Of Course!" interpretive signs along cart paths point out natural features of interest or significance
- Wide fairways enhance playability
- Wetlands and ponds increase challenge of play
- Sand bunkers and freshwater lakes provide a strategic challenge for accomplished golfers
- Multiple tees on every hole make the course playable and enjoyable by all level players
- State of the art practice facility with target greens and sand traps



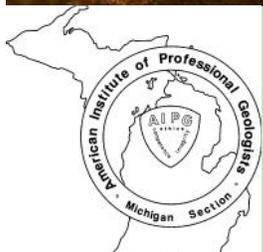
Accolades

- Included in The Oakland Press' "Ten to Try This Summer" listing of Oakland County Public Golf Courses
- Member of *Arthur Hills Golf Trail*, featuring acclaimed Art Hills courses throughout the state
- Garnered a 4.5 star rating by *Golf Digest* and named the #2 course in Detroit to play in ESPN's *Sports Travel Golf Course Guide* of the Best Places to Play
- Named #4 in Jeff Lesson's Top 10 Public Golf Courses in southeast Michigan. (Lesson hosts "Lesson on Golf" on WXYT and WWJ radio stations)
- Named in Detroit Free Press *Top 10 Public Courses*





Call for Sponsors



American Institute of Professional Geologists– Wayne State University Student Chapter 1st Annual Fundraiser at the Detroit Historical Museum



COST: \$250

Sponsorship includes:

- Opportunity to introduce your company to graduating students.
- 6-8' table for display.
- One free registration.
- Advertise job opportunities for entry level staff and internships.

Limited Space Available.

Please register as a sponsor at:

<https://www.eventbrite.com/e/aipg-michiganwsu-student-chapter-special-event-section-meeting-tickets-12752383723>

The Wayne State Student Chapter of the AIPG Michigan Section is looking for Sponsors for a Student Meet & Greet/Career Info Night at their First Annual Fundraiser to be held: March 27, 2015
At the Detroit Historical Museum

Guest Speaker: Hal Fitch, MDEQ Office of Oil & Gas Well Management

Topic: HydroFracking in Michigan

All proceeds will benefit the AIPG/WSU Student Chapter to support department field trips, club activities and student scholarship awards.

For More Information, please contact:

Dawn Prell, AIPG President, at dawn_prell@golder.com; or
Mellisa Allen, Student Chapter Vice President, at MellisaAllen@wayne.edu

Call For Donations



American Institute of Professional Geologists—
Wayne State University Student Chapter
1st Annual Fundraiser at the Detroit Historical



Please Consider donating:

- Mineral/ Rock Samples
 - Items incorporating minerals, rocks samples
- Field Gear
 - Rock Hammers
 - Hand Lenses
 - Field books
- Gift Certificates
- Michigan themed items
- Geology themed items
- Miscellaneous

The Wayne State Student Chapter of the AIPG Michigan Section is looking for donations for a silent auction at their first annual fundraiser to be held on March 27, 2015.

All proceeds will benefit the AIPG– WSU Student Chapter to support department field trips, club activities and student scholarship awards.

Please contact:

Mellisa Allen, Student Chapter Vice President, at MellisaAllen@wayne.edu
Donations can be dropped off or sent to: Wayne State Department of Geology,
Attention: AIPG WSU Student Section
0224 Old Main
4841 Cass Avenue
Detroit, MI 48202

Be sure to include your name, address and description of item being donated.

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

March 27, 2015

HYDRAULIC FRACTURING IN OIL AND GAS DEVELOPMENT

Featured Speaker

[Hal Fitch, Chief of Oil, Gas, and Minerals, MDEQ](#)

Location: Detroit Historical Museum, Detroit, MI (Map attached)

Cost: Students \$30, Alumni/Faculty \$40, Members \$50.00, Non-members \$70.00. **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: Strolling Dinner will include Michigan Themed Food Stations: D-Town Station: BBQ shredded pork sliders, Portabello mushroom sliders, Michigan Cole Slaw, Mini Coney Dogs, Potato Chips; Greek Town Station: Mediterranean Platter with Hummus, Tabbouleh, Greek Olives, Baby Carrots, Peppercini, Falafel, Stuffed Green Leaves and Feta Cheese Served with Pita Bread; Mexican Town: Create your own Nacho's and Tacos with Shredded chicken, Refried beans, guacamole, salsa, cheese, sour cream, Black bean and corn salad, Queso fundito with Chorizo, Flour tortilla and corn chips; Dessert - Ice cream sundae bar. Floats with Faygo root beer and Vernors.

Time: Band, Bar (Registrants get two free drink tickets) and Strolling Dinner 5:30-7:00 PM, Speaker 7:00-9:00 PM; Museum will remain open until 11:00 PM

RSVP: On the Eventbrite website no later than March 24th at: <https://www.eventbrite.com/e/aipg-michiganwsu-student-chapter-special-event-section-meeting-tickets-12752383723>. You can select your meal choice and pay online if you choose, or pay at the door by cash or check if you prefer.

Abstract: Hydraulic fracturing has contributed significantly to oil and gas production in the U.S. The technology has been used in the U.S. since the 1940s, to develop oil and gas resources in shale and similar rocks that would otherwise not be productive. Michigan has seen over 12,000 wells hydraulically fractured since the 1950s, with no cases of adverse impacts on the environment or public health.

Despite its long and safe history, hydraulic fracturing has become a controversial issue in recent years, in part because it is being used at a much larger scale, primarily in horizontal wells. The concerns center on six issues: (1) migration of gas or fracture fluids, (2) water use, (3) management of flowback water, (4) surface spills, (5) disclosure of chemical additives, and (6) induced seismicity. This presentation will explain the elements of hydraulic fracturing, the reality behind the public concerns, and how the oil and gas industry and state regulators are dealing with the issues.

Speaker Bio: Hal Fitch has served as Director of the Office of Oil, Gas, and Minerals (OOGM) of the Michigan Department of Environmental Quality since 1996. The OOGM regulates oil, gas, and brine wells and facilities; underground disposal wells; mineral exploration test wells; and surface and underground mines.

Hal earned a Bachelor of Science degree in Geology from Michigan Technological University in 1972. He began his career as a geologist with the U.S. Geological Survey in Denver, Colorado, where he spent two years doing geologic mapping and resource evaluation. He then returned to his home state and joined the Geological Survey Division, predecessor of the OOGM. He has been with the OOGM since 1974 except for a two-year break to do graduate work in hydrology at the University of Arizona. Prior to his appointment as Director of the OOGM, Hal worked as a field inspector, ground water specialist, and district supervisor, and was stationed at several field offices in northern Michigan as well as at Lansing.

AIPG Michigan Section Annual Meeting March 27, 2015

Detroit Historical Museum, Detroit

5401 Woodward Avenue

