



# American Institute of Professional Geologists Michigan Section

March 2014

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## From the President's Desk

The first quarter of 2014 has been a busy time for AIPG Michigan Section volunteers working to ensure that several upcoming events go off without a hitch. Our first membership meeting was on February 20, at Cleary University in Howell. Despite the threat of another winter storm, we had a decent turnout with about 75% of those registered to attend making the trek to visit with peers, have dinner together and hear Mark Sweatman of AMEC give an engrossing presentation describing a groundwater under the influence of surface water evaluation for the City of Charlotte.

Our next meeting will be on April 24, at the Kellogg Center in East Lansing. Our speaker will be Jim Tolbert, and he will present a scientific overview of the information and data related to the volatile anthropomorphic/natural climate change discussion. It should prove to be an interesting topic, one in which geoscientists as a group must be engaged. I look forward to hearing Jim's presentation and expect that it will be of interest to many of our members.

While the Executive Committee has been busy securing a speaker and venue for the April meeting, volunteers on the planning committee for the 2014 AIPG Michigan Section Workshop have been working diligently to obtain commitments from speakers and to identify and recruit corporate sponsors. The workshop is scheduled for June 17-18 and will focus on groundwater/surface water interface issues. Once again, it will take place at the MDNR's RAM Center in Roscommon, Michigan.

The Michigan Section will again host our annual golf outing at Lyon Oaks Golf Course in Wixom to raise funds for educational grants and scholarships. The outing will be on May 13. Spring is here, so clean your clubs and bring some friends, clients, or coworkers to enjoy being outdoors for a day of fun on the links. If you don't golf, feel free to help with planning or registration on event day. Contact Kevin Lund or Bob Reichenbach to see where you can make a difference.

You can register for the workshop and the golf outing on-line at the following web address:

<http://www.eventbrite.com/o/aipg-michigan-section-5880615159?s=21868567>.

Other events are in the works, including a field trip and a lunch-time presentation to discuss upcoming regulatory changes and issues that may impact you or your clients. Keep an eye out for news on these events.

With your help and input, we hope to make 2014 another successful year for the Michigan Section. Money made from these events goes to educational grants and scholarships, and to further the understanding of the geosciences within Michigan. With your help and input, we hope to become a better organization and to be able to reach out more to students and educational institutions to keep geology relevant in an ever changing world. Thanks for your assistance and support.

Craig Savage, CPG – 2014 Michigan Section President

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## Section Officers Reports

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

Vice President: No report.

Treasurer: No Report.

Secretary: No Report.

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## Coming Events

**April 9, 2014:** MBGS's Annual BBQ. To be held at Western Michigan University in the Michigan Geological Repository for Research and Education Building, Kalamazoo, Michigan. Social hour will begin at 5:00 pm; dinner will be served at 6:00 pm; presentation at 7:00 pm; cost \$25. The speaker will be John A. Yellich, CPG, Director of the Michigan Geological Survey, presenting "Michigan Geological Survey, securing the future of Michigan."

**April 24, 2014:** Michigan Section AIPG Meeting, Michigan State University, East Lansing. Jim Tolbert

will be speaking about "A Geologist Views Climate Change."

Location: Kellogg Center, Michigan State University, East Lansing.

Dinner: Cranberry Port Chicken, Gathered Field Greens Salad with Crumbled Goad Cheese, Candied Pecans and Red Wine Vinaigrette, Chefs choice of Vegetable, rolls, butter and dessert. Vegetarian meal available upon request.

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 April 21, 2014:** RSVP for the meeting on the Eventbrite website no later than April 21<sup>st</sup> at: <https://www.eventbrite.com/e/aipg-section-meeting-tickets-11069233375>.

**May 2-4, 2014:** Kalamazoo Geological & Mineral Society Annual Gem & Mineral Show, Kalamazoo, Michigan, <http://kalamazoorockclub.org/>.

**May 13, 2014:** Michigan Section AIPG 10<sup>th</sup> Annual Golf Outing, Lyon Oaks Golf Course, Wixom. See flyer attached to this newsletter for registration details.

**May 15-16, 2014:** Institute on Lake Superior Geology Annual Meeting, Hibbing, Minnesota, <http://www.lakesuperiorgeology.org/>.

**May 2014:** MBGS Field Trip "Salem Limestone and Karst, Bedford Area, South Central Indiana." Includes Victor Oolitic Quarry, Central Quarry, Crown Quarry, Blue Springs Cavern, and Sullivan or Donahue Cave.

**June 17-18, 2014:** Fourth Annual Michigan Section AIPG summer conference, Ralph A. MacMullen Center, Higgins Lake. This year's topic is Groundwater Surface Water Issues. For information, please contact Sara Pearson at [pearsons@michigan.gov](mailto:pearsons@michigan.gov).

**August 1, 2, and 3, 2014:** Michigan Section AIPG field trip. Details forthcoming.

**August or September 2014:** MBGS Field Trip "Silurian and Ordovician, Eastern Upper Peninsula, Michigan." Trip to be led by Dr. Peter Voice, Michigan Geological Survey, Western Michigan University.

**September 13-16, 2014:** 51<sup>st</sup> Annual AIPG Meeting, Prescott, Arizona.

**September 27-30, 2014:** American Association of Petroleum Geologists 42nd Annual Eastern Section Meeting. The meeting will be September 27-30, 2014 in London, Ontario, Canada. Further information may be found at the meeting website: [www.esaapg2014.org](http://www.esaapg2014.org) or contact the organizing committee at (519) 680-1620 or via email at [info@esaapg2014.org](mailto:info@esaapg2014.org).

**October 2, 2014:** Michigan Section AIPG Meeting, meeting details TBD.

**December 4, 2014:** Michigan Section AIPG Annual Meeting and awards presentation, meeting location TBD.

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## 2014 Golf Outing

It is time to register for our Annual AIPG Golf Outing. We strive to continue to add to our numbers this year, and are asking for your help. Please make a point to do your best to spread the word and participate in this event which takes place on Tuesday, May 13, 2014 at Lyon Oaks Golf Course in Wixom, MI.

Also, please pass this information along to your service providers/subcontractors/suppliers. This event offers excellent sponsorship exposure for companies that support and serve our profession. This event is open to everybody, so please come and take advantage of the opportunity.

The money raised is put toward the Michigan Section's K-12 educational grant recipients. To insure continued success, please assist us by participating, sponsoring, soliciting sponsors, and/or donating prizes or items. Call Bob Reichenbach at 734-476-5933 or Kevin Lund at 888-417-4440 to register or to offer your time to assist with the event.

The registration and sponsorship form is included in this newsletter and has been posted to the Michigan Section's website <http://mi.aipg.org/>. Click on "Golf Outing." Forms can be faxed to (248) 476-5933. We hope to see you May 13. On-line registration is also available at: <http://www.eventbrite.com/e/2014-aipg-mi-section-golf-outing-tickets-10592088221?aff=es2>.

Bob Reichenbach and Kevin Lund, Golf Outing Co-Chairs

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## 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 of us would be glad to hear from you. AIPG is your organization. Please help keep it relevant and interesting for all by participating.

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## February 2014 Section Meeting

The first quarterly meeting of 2014 took place on February 20. History once again repeated itself with bad weather across Michigan. Although 3 inches of rain and snow fell, most who had already planned to attend braved the elements and came out to the Johnson Center at Cleary College to hear Mark Sweatman provide a case study on Groundwater Under the Direct Influence of Surface Water, an evaluation for the City of Charlotte, Michigan.



Mark Sweatman presenting his talk on Groundwater Under Direct Influence for the City of Charlotte. Photograph courtesy of Dawn Prell.

Mark's talk was well received by nearly 40 members and non-members alike. Thank you Mark for sharing your experience and project with us.



Craig Savage (left) presenting Mark Sweatman with a speaker's gift following his presentation. Photograph courtesy of Dawn Prell.

Important announcements included notification of our next quarterly meeting which will be held on April 24, 2014. Details and location will be determined soon. Also, the 4th Annual Michigan Section AIPG Technical conference will take place June 17-18 at the Ralph A. MacMullen Center, Higgins Lake. The conference topic includes Groundwater / Surface Water Interface – Characterization, Evaluation and Compliance. Registration is now available.

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## 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:

Chad Gregory, Lewis Matthews, Nathan Charlton, Courtney Wright, Richard McGregor, Marvin Wells, Ashley Reibel, Raven Wright, Douglas

Detraz, Mike Ferro, Jacob Wagaman, Alexander Rode, Amanda Pruehs, Devon Schroeder, Christopher Leon, Anthony Letizio, David Letizio, Chris Kramb, Laura Robles, Abbas Khalaf, Christopher Vanderlip, Matthew McGhee, Logan Knoper, Abraham Downer, Jasmine Stefansky, Chelsea Walsh, and Kasey Fritz.

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.

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## Michigan Department of Environmental Quality News

### Mixing Zones: A Rarely Used Option to Achieve Closure

**Myth:** Closure is not achievable at a Leaking Underground Storage Tank (LUST) site using mixing zone-based criteria.

#### *What are mixing zone-based criteria?*

The development of mixing zone-based criteria is a tool that may be used to demonstrate compliance with the groundwater/surface water interface (GSI). The process includes the calculation of site-specific criteria that take into consideration for the dilution that occurs when contaminated groundwater enters surface water. The calculations include the three-dimensional area where the contamination is venting, the specific contaminants, the rate of groundwater flow, and the rate of flow in the surface water body. In cases where dilution is significant, the mixing zone-based criteria will likely be higher than generic GSI criteria and still be protective of surface water. Mixing zone-based criteria may be used to identify a cleanup goal for the site. This tool is also useful for demonstrating compliance with site-specific criteria.

#### *What is the process for obtaining mixing zone-based criteria?*

The process starts with a request by submitting to the Michigan Department of Environmental Quality (MDEQ), Remediation and Redevelopment Division (RRD), project manager to develop mixing zone-based criteria. A form is available on the MDEQ website to streamline the process for making this request. The RRD project manager forwards the request to the MDEQ, Water Resources Division (WRD), who develop the mixing zone-based criteria. After the mixing zone-based criteria are developed, the RRD project manager will provide the values to the submitter.

The ideal time to submit a request for mixing zone-based criteria is between the initial assessment and final assessment reporting milestones. The mixing zone criteria received from the MDEQ may then be incorporated into the corrective action plan and receive authorization with approval of the Final Assessment Report (FAR). If the FAR has already been submitted, a request may still be submitted. Authorization may be granted prior to, or as part of the Closure Report for these submittals. Authorization from the MDEQ is required when a party elects to rely on mixing zone-based criteria.

### ***What sites with mixing zone-based criteria are eligible for closure?***

In past years, requests for the development of mixing zone-based criteria at LUST sites have been rare. Part of the reason behind the limited use for this tool may be the perception that a site could not be closed if it had a mixing zone that required a five-year renewal and continued monitoring. The five-year renewal and continued monitoring are not required for every site. The following description serves as just one example of many scenarios where a LUST site with mixing zone-based criteria is eligible for closure.

A LUST site has a narrow contaminant plume that is migrating to a large, swiftly flowing river, and wells have been installed along the bank to measure the contaminant levels in the groundwater that will likely vent into the river. The analyses of the groundwater indicate that levels are higher than would be allowed for in a basic risk assessment using the MDEQ's published generic GSI criteria. The owner, along with his consultant, may choose to request the development of mixing zone-based criteria from the MDEQ that accounts for dilution from the large, swiftly flowing river.

The MDEQ provides the mixing zone-based criteria to the owner, and the owner's consultant compares the contaminant levels in the groundwater at the site to the new mixing zone-based criteria. The consultant determines that the concentrations in the groundwater are below the new criteria and looks at historical data that indicates the concentrations present at the site do not have the potential to exceed the mixing zone-based criteria. The owner and consultant ask for the mixing zone-based criteria to be authorized by the MDEQ for the site. The MDEQ authorizes the mixing zone-based criteria which are then used to demonstrate compliance and are included as part of the Closure Report. Closure is granted with no need for long-term monitoring or reauthorization for the site as long as all other relevant pathways and risks are addressed.

As described in this brief example, the use of mixing zone-based criteria is a useful tool to establish a site-

specific cleanup goal to address the GSI pathway, demonstrate compliance, and achieve closure at LUST sites.

**Fact:** Closure is achievable at LUST sites using mixing zone-based criteria.

Sara Pearson, MDEQ RRD TAPS Team Coordinator, CPG #10650

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## **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.

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## **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](mailto: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.

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## **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](mailto: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.

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## **4<sup>th</sup> Annual Michigan Section AIPG Workshop – Coming Soon**

### **Groundwater/Surface Water Interface - Characterization, Evaluation, and Compliance**

Following the Michigan Section golf outing, our next Section event is the 4th Annual AIPG Workshop (technical conference) to be held from June 17-18, 2014, at the Ralph A. MacMullen (RAM) Center along Higgins Lake. This year's workshop theme is titled "The Groundwater/Surface Water Interface (GSI) - Characterization, Evaluation and Compliance." Our keynote speaker is Jon Allan, Director of the DEQ's Office of the Great Lakes, who

will address the strategic importance of Michigan's water resources. In light of the 2012 legislative changes to the State's environmental remediation program, the Workshop will focus on the science and risks associated with contaminated venting groundwater as well as ways to demonstrate compliance with regulations to help bring sites to closure. Attendees will hear the latest regulatory updates on GSI, as well as sampling techniques and project case studies directly related to the 10 ways to evaluate and manage risks for the GSI pathway. Additionally, attendees will be able to participate in hands-on field demonstrations along scenic Higgins Lake using established field methods and tools to measure water quality characteristics (e.g., pore water sampling) and also some remote sensing technologies (infrared thermal imaging) to observe the dynamics of the GSI.

Registration before May 31<sup>st</sup> for all AIPG members is set at \$350, non-members at \$395, for the two day conference, with a single-day option for \$220. Registration for the Workshop includes workshop materials; lunch each day, dinner on Tuesday, breakfast on Wednesday, snacks and drinks during breaks; and a social networking event on Tuesday night.

Sponsors can contact the Workshop co-chairs, Sara Pearson, TAPS Team Coordinator at MDEQ-RRD ([pearsons@michigan.gov](mailto:pearsons@michigan.gov)), and Rick Dunkin, President and Senior Geologist at EcoRock Consulting, LLC ([ecorock@comcast.net](mailto:ecorock@comcast.net)), as well as any members of the AIPG Michigan Section Board. Currently, we are planning on a sell-out of approximately 200 attendees.

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## Learning (and Re-Learning) Tool

*The following article was submitted by one of our members...*

Constant learning is a good practice for all professionals. Recently, I was introduced to a learning tool at Cerego.com which helps people memorize sets of information. This site was used as part of a massive open online course (MOOC) I was taking, and I saw an application for other areas where I wanted to learn (or re-learn) information. As a test case to utilizing Cerego.org for my own purposes, I created a tool to re-learn the Geologic Periods – order, dates, and key facts. I found I was a bit rusty, and this has helped me refresh some basic facts. Cerego.com and the "Series" on Geologic Periods are open to the public. You can try out a new learning tool and re-refresh your knowledge of the geologic periods at the same time.

If you are interested, go to [cerego.com](http://cerego.com) and create an account (or login). Search for "Geologic Periods" and make sure you go to the "Series" tab. [There is a

"set" tab and a "series" tab - a series can contain multiple sets, and in this case the Geologic Period Series contains three Geologic Period sets.] If you try it, I'd appreciate feedback through e-mail ([james.n.tolbert@gmail.com](mailto:james.n.tolbert@gmail.com)) or a LinkedIn message. If you like it, you can also explore one of the many other topical Series that are on the site.

James Tolbert; CPG-10492

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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.*

No information for the Member's Corner was provided to the Editor for this edition of the newsletter.

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## 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.*

### Entry Level Environmental Engineer – Novi, MI

Do you have a Geology or Environmental Science degree with 1 to 5 years of environmental/consulting experience? Are you looking for an opportunity to work with Senior Staff on a variety of technically challenging environmental projects? Are you looking for an opportunity to work with an established environmental consulting firm that values its employee's enthusiasm and technical contributions? If so, we encourage you to apply for this opportunity. We are dedicated to providing the atmosphere to allow individuals to grow their career.

### Key Responsibilities

- Entry Level to Staff II Geologist or Environmental Scientist needed to join our Novi, MI team.
- Performs routine, well-defined field and office assignments (technical and non-technical); receives detailed instructions on objectives, complex features, and possible solutions; receives close supervision and review of work. With experience, may be assigned some tasks with minimal supervision.
- The position is approximately 70% field work and 30% office work on a variety of projects including industrial, state and federal sites.

Responsibilities include, but are not limited to:

- Completes field investigations including groundwater, soil, soil vapor, sampling by Geoprobe, HAS, Rotosonic, or hand boring methods.
- Develop soil boring descriptions.
- Conducts routine groundwater sampling events.
- The ideal candidate would have experience installing and logging wells to over 100 feet with HAS and Rotosonic drilling techniques.
- The ideal candidate would have experience collecting VAS sampling to over 100 feet.
- Preparation of boring logs, data tables, figures, and graphs.
- Preparation of technical memoranda/reports documenting analysis
- Develop groundwater flow maps.
- Would complete assignments for government and industrial clients.
- Assist senior staff in the development of environmental investigation reports including figures and tables.
- With guidance and mentoring from senior geologist, manage and analyze large environmental datasets with spreadsheets and other technical software, prepare plots and quantitative summaries, and document analytical methods.
- Learn and stay up-to-date on guidance, state and federal environmental regulations, reviews, and methods relevant to the investigation of contaminated sites.
- Deliver processed data in an organized fashion, following data management and network standards.
- Maintain and develop vendor and other professional contacts.
- Participate in training events, project meetings, and project team meetings.
- Work and travel safely, follow company and site safety standards, maintain permits and training certificates.
- Our professionals work on many projects at one time and must have the ability to maintain successful client relations

- Will travel to project sites primarily in Michigan and surrounding states in the Great Lakes Area. Approximately 50% overnight travel.

#### Basic/Required Qualifications

- B.S. degree in Geology or Environmental Science.
- One to 5 years environmental/consulting experience including drilling experience.
- Basic understanding of fundamental analytical skills.
- Excellent communication, both verbal and written, and organizational abilities.
- Flexibility to work outside of normal business hours as required.
- Ability and willingness to travel to project sites primarily in Michigan and surrounding states in the Great Lakes Area.
- Must pass drug test, entrance physical, background check and must have a satisfactory driving record in accordance with the Company's driving (MVR) policy.

#### Preferred Qualifications

- Computer knowledge of MS Word, Excel, ArcGIS, CADD, etc.
- Ability to work both independently and as part of a team.
- Good understanding of environmental hydrogeology.
- OSHA HAZWOPER 40 hr training in accordance with 29CFR1910.120
- Interest in pursuing CPG or PG, if a Geologist

#### Physical Demands

- Working outside in various, inclement weather conditions, uneven terrain.
- Ability to lift and move heavy objects (50 pounds).
- Office work with computer.

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Please contact Duane Hattem (616) 307-1587 or [dhattem@esclabsciences.com](mailto:dhattem@esclabsciences.com)  
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**Michigan Chapter  
American Institute of Professional Geologists  
MEETING ANNOUNCEMENT**

**April 24, 2014**

**A GEOLOGIST VIEWS CLIMATE CHANGE**

Featured Speaker

[Jim Tolbert](#)

**Location:** Kellogg Center, Michigan State University, East Lansing, 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:** Cranberry Port Chicken, Gathered Field Greens Salad with Crumbled Goad Cheese, Candied Pecans and Red Wine Vinaigrette, Chefs choice of Vegetable, rolls, butter and dessert. Vegetarian meal available upon request.

**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 April 21<sup>st</sup> at: <https://www.eventbrite.com/e/aipg-section-meeting-tickets-11069233375>. You can select your meal choice and pay online if you choose, or pay at the door by cash or check if you prefer.

**Mr. Tolbert** is a geochemist with experience characterizing and remediating sites with contaminated sediments, soil and groundwater. After receiving his Bachelors and Masters of Science in Geology from Michigan State University, he worked for 27 years on remediation projects which were mostly within Michigan. His projects have included characterizing chlorinated dioxins and furans along the Tittabawassee River, addressing the Line 6B crude oil spill into the Kalamazoo River, characterizing and dredging sediments in White Lake impacted with PCBs and hexachlorobenzene, and numerous projects where chlorinated organic compounds and DNAPL impacted soil and groundwater. Mr. Tolbert is currently retired. He is using this period to attempt to foster a more rational dialogue on climate change.

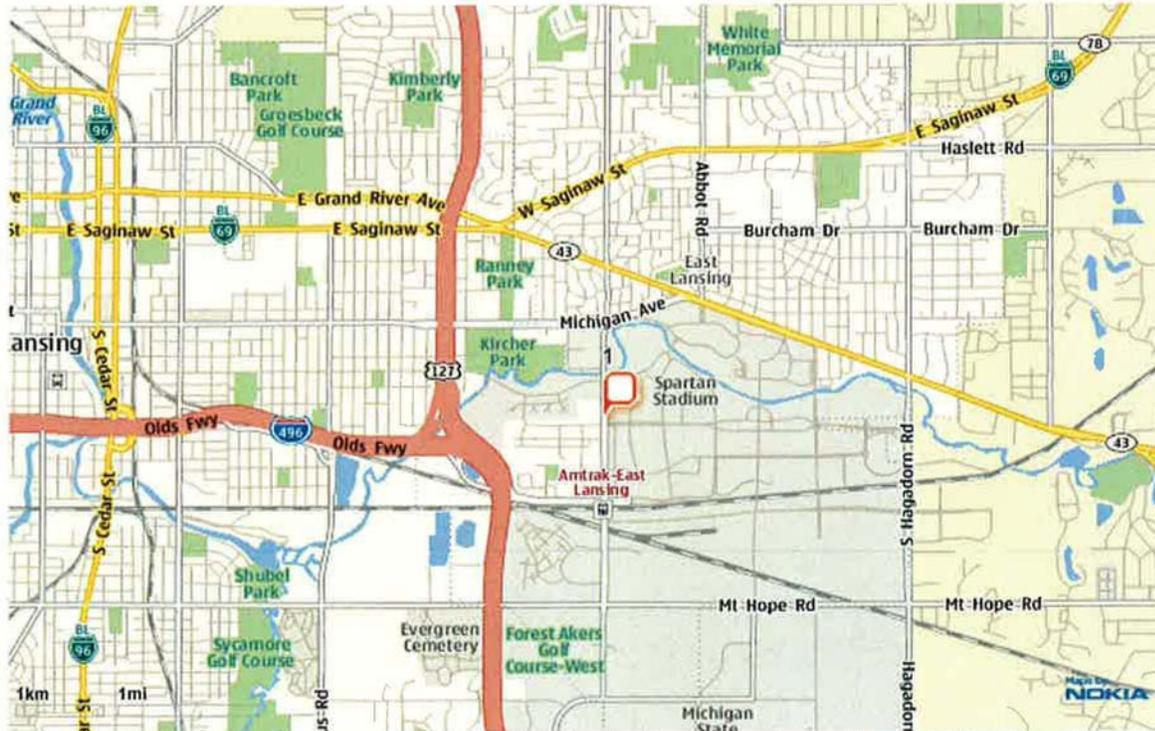
# AIPG Section Meeting April 24, 2014

## Kellogg Center, East Lansing

**YAHOO! MAPS**

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Kellogg Ctr, East Lansing, MI 48824



When using any driving directions or map, its a good idea to double check and make sure the road still exists, watch out for construction, and follow all traffic safety precautions. This is only to be used as an aid in planning

**From the East - I-96 West, to US-127 (exit 106) North (3.1 miles) to Trowbridge Road exit East (.5 miles) to Harrison Avenue; turn left North approximately 1 mile on the right (four traffic lights up).**

**From the Southwest - I-94 East to I-69 North, to I-496 East; East (5 miles) to Trowbridge Road (exit 9) East (.5 miles) to Harrison Avenue; turn left North approximately 1 mile on the right (four traffic lights up).**

**From the West - East on I-96 to I-496 (exit 95) East (9.7 miles) to Trowbridge Road (exit 9) East (.5 miles) to Harrison Avenue; turn left North approximately 1 mile on the right (four traffic lights up).**

**From the North - South on US-27 to US-127 South (8.5 miles) to Trowbridge Road exit East (.5 miles) to Harrison Avenue; turn left North approximately 1 mile on the right (four traffic lights up).**