



MICHIGAN SECTION AIPG NEWSLETTER

# Michigan Newsletter



## IN THIS ISSUE

## From the President's Desk

by Linda Hensel, CPG

Celebrating our 40th year as an AIPG Section (1977-2017)...

I trust this letter finds you all in good spirits and health. Spring is finally feeling like spring and is most welcome after another Michigan winter. I urge you all to be a motivator to others whether they be colleagues, friends, family or people you meet during the course of your normal day.

The theme of my newsletter article for this quarter is motivation. Everyone can use a word of encouragement each day whether it be via a text, an email, a phone call or card. One single word of encouragement may be the most important motivation to assist our friends, colleagues, fellow MI Section AIPG members on any given day and enrich their life. Our fast paced world leaves little time to encourage others, but it is important for your own personal and others physical, mental, psychological and mental well-being. In addition, I encourage each of you to talk to children from kindergarten age through high school age about what you love about geology and the physical sciences. Your zeal for your profession can be integral to spark the interest in others that might lead them to start a rock collection or conduct research on a particular topic of interest they may have in

the physical and the geological sciences. Let us all do our part every day to provide the motivation to another person.

We are in the process of final planning for the early September 2017 quarterly meeting, which will be a joint meeting of AIPG and MAEP. Please check the Section's website and look for upcoming announcements about the meeting.

We are working on more surprises for you during 2017 to celebrate our 40th year as an AIPG Section. We urge you to review our newsletters to keep abreast of our planned activities in 2017 and checking out our website.

Details of the annual golf outing, technical workshop, student scholarship, Regulatory Roundup, and more can be found in this edition of the newsletter. Please be sure to check it out!

### Regulatory Roundup

The latest information on new legislative activity for the State of Michigan. This includes links to emergency rules, new bills, and bills up for consideration by the legislature.

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### 2017 Field Trip

The Michigan Section is holding a joint field trip with the Wisconsin Section this summer.

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### Student Scholarship

The 2017 Michigan Section student scholarship is now available for undergraduate students to apply for.

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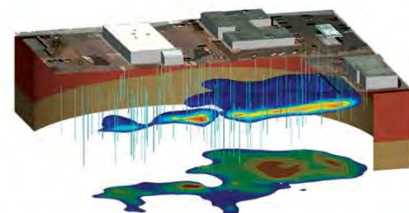
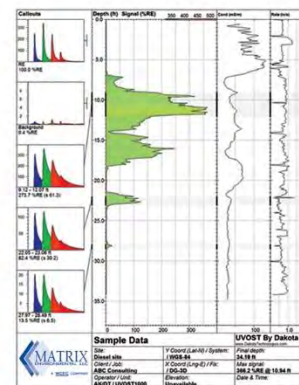
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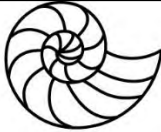
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## Support Our Sponsors!

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.

## National Scholarship

Every year, the National Executive Committee offers up to 10 student scholarships to student members. In 2017, I'm pleased to announce that one of our Michigan Section student members, Lindsey Abdale, of the University of Michigan was one of those individuals selected by the National scholarship committee to receive a scholarship. Lindsey will receive a certificate and an award of \$1,000.

Congratulations Lindsey!

Adam Heft, 2017 National President

## Regulatory Roundup

What's the latest news from the capitol? The emergency rule for 1,4-dioxane has been extended for an additional six months. There are new air and hazardous waste rules.

In today's climate, it is imperative that we participate in the political process to ensure that our voices are heard as expert environmental practitioners. As we have indicated before, legislative initiatives establish the trends in the industry and what we do and how we do it. It is our duty as professionals to speak up and help guide these initiatives both here in Michigan and nationally, when possible. Individually and as an organization, we can make a difference! One legislative action that has the potential to impact our everyday business is the appropriations legislation. Funding is needed for the environmental remediation program for facilities with contaminants of concern other than petroleum and brownfield projects. This funding is directly used for cleanup and other environmentally related activities. There is no apparent solution to fill this need for funding currently.

We have listed many new rules and regulations as well as bills up for consideration by the legislature with a direct link to the rule, regulation or bill and a brief description and status.

### EMERGENCY RULES

[1,4-Dioxane](#) – Establishes Cleanup Criteria for 1,4-Dioxane. **Effective from April 27, 2017**

until **October 27, 2017**. The DEQ has renewed the emergency rule for an additional 6 months.

### NEW RULES

[2016-003 EQ](#) Part 6. Emission Limitations and Prohibitions-Existing Sources of Volatile Organic Compound Emissions – Air Quality Division – These rules are meant to transfer adoptions by reference to another rule section, to clarify testing requirements for cutback and emulsified asphalts in R 336.1618, and to simplify references to federal test methods by making the citations consistent throughout the Part 6 rules. **Effective March 29, 2017.**

[2016-007 EQ](#) Hazardous Waste Management - Office of Waste Management & Radiological Protection – The purpose of these rules is maintain federal authorization to administer the state's Hazardous Waste Management Program under Act 451 in lieu of the federal Hazardous Waste Management Program under the Resource Conservation and Recovery Act (RCRA) of 1976, as amended by the Hazardous and Solid Waste Amendments of 1984; to improve the overall quality of the rules, both in terms of clarification of existing requirements and areas of program coverage; and to reduce some of the regulatory burdens



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## RULES UP FOR CONSIDERATION

[2015-094 EQ](#) Environmental Contamination Response Activity – Remediation and Redevelopment Division - Revision of Cleanup Criteria under Part 201 Environmental Remediation Act.

[2016-037 EQ](#) Water Resources Protection -- Part 17. Soil Erosion and Sedimentation Control – Water Resource Division - The Michigan Department of Environmental Quality (MDEQ), in partnership with the Michigan Department of Transportation (MDOT) and the County Road Association of Michigan, would like to revise the definition of landowner to provide for entities authorized by transportation agencies to perform work in the right-of-way to obtain soil erosion permits from the appropriate permitting agencies when permit coverage is required.

[2017-006 EQ](#) – Part 9. Emission Limitation and Prohibitions-Miscellaneous – Air Quality Division – The purpose of these rule revisions is to update material adopted by reference in R 336.1902; to correct emission limits in R 336.1973 to align with the federal emission limits; to add R 336.1974 as a new rule for existing commercial and industrial solid waste incinerators; and to add R 336.1975 as a new rule for existing landfills.

[2017-008 EQ](#) – Supply Water to the Public – Part 1–Part 28 – Office of Drinking Water and Municipal Assistance – Request for Rule-making filed and approved on March 9, 2017.

[2017-017 EQ](#) – Oil and Gas Operations – Office of Oil, Gas, and Minerals – R 324.208 mandates that oil and gas well permits shall terminate two years after the date of issuance unless drilling has begun or the well is in operation. In recent years, there has been an increasing number of legal challenges and economic factors that have delayed the start of drilling beyond two years after permit issuance. Many states and the federal government allow for extension of a permit for such reasons; whereas, Michigan’s current oil and gas rules do not. The inability to extend a permit can pose a problem for permittees. R 324.212 sets the amounts of single-well and blanket bonds for oil and gas exploration and production wells, gas storage wells, and associated injection wells and facilities. Part 615, Supervisor of Wells, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA) provides for the Supervisor of Wells (Supervisor) to claim a bond to cover costs

incurred by the Supervisor to case, plug, or repair a well. The bond amounts were last set in 1996. Since that time, the costs to plug wells have risen by approximately 100 percent. A 2013 audit contained a finding by the Auditor General that “OOGM [since renamed OGMD, the Oil, Gas, and Minerals Division] had not pursued changes in legislation to update current well drilling laws related to surety bonds. Current bond amounts allowed by statute are not sufficient to cover OOGM’s cost of plugging a well. An increase in the required amount of the surety bond would help reduce OOGM’s costs to plug nonproductive wells.” R 324.1002(8) contains an obvious error. The rule was revised as part of a larger rule revision effective March 11, 2015. The revision changed subdivision numbering and R 324.1002(8) did not reflect that change. Specifically, the sub rule states in part “If sampling indicates a possible problem, then additional sampling for the water quality parameters established in R 324.201(2)(j)(vi) may be required.” The cross-reference should be to R 324.201(2)(k)(vi). Request for rulemaking filed on April 14, 2017.

## BILLS INTRODUCED IN 2017

[SB 63 Lead Action Level](#) – Reduces lead action level. Bill was introduced by Senator Jim Ananich in January 2017 and was referred to the Committee on Government Operations.

[SB 111 Brownfield Redevelopment Authority](#) – Provides for transformational brownfield plans. Passed in the Senate on 2/22/2017.

[SB 112 Brownfield Plans](#) – Captures and earmarks certain individual income tax revenues attributable to transformational brownfield plans. Passed in the Senate on 2/22/2017.

[SB 113 Brownfield Plans](#) - Captures and earmarks certain sales tax revenue attributable to transformational brownfield plans. Passed in the Senate on 2/22/2017.

[SB 114 Brownfield Plans](#) - Captures and earmarks certain sales tax revenue attributable to transformational brownfield plans. Passed in the Senate on 2/22/2017.

[SB 115 Renaissance Zones](#) - Modifies exemption of certain taxes in renaissance zones. Passed in the Senate on 2/22/2017.

[SB 129 Copper Mining Operations](#) - Establishes separate regulatory program for small native copper mining operations. Amends 1994 PA 451 by amending sections 3118, 9115, and 63201 (MCL 324.3118, 324.9115, and 324.63201), section 3118 as

amended by 2015 PA 82, section 9115 as amended by 2011 PA 214, and section 63201 as added by 2004 PA 449, and by adding part 634. Bill was passed by the Senate in March then and passed by the House on April 25, 2017 with a recommendation for immediate effect.

[SB 140 DEQ](#) - Provide for Department of Environmental Quality budget for the 2017-18 fiscal year. Bill was introduced by Senator Michael Green in February 2017 and was referred to the Committee on Appropriations. Substitute bill S-1 was adopted on 4/19/2017.

[SB 154 Water Resources Commission](#) - Establishes water resources commission. Amends 1994 PA 451 by amending sections 3101, 3102, 3112, 3113, and 3120 (MCL 324.3101, 324.3102, 324.3112, 324.3113, and 324.3120), section 3101 as amended by 2015 PA 247, section 3112 as amended by 2005 PA 33, section 3113 as amended by 2004 PA 91, and section 3120 as amended by 2015 PA 82, and by adding section 3102a. Bill was introduced by Senator Jim Ananich in February 2017 and was referred to the Committee on Government Operations.

[SB 156 Air Pollution Commission](#) - Establishes air pollution control commission. Amends 1994 PA 451 by amending sections 5501 and 5522 (MCL 324.5501 and 324.5522), section 5501 as amended by 1998 PA 245 and section 5522 as amended by 2015 PA 60, and by adding sections 5501b and 5501d. Bill was introduced by Senator Hoon-Yung Hopgood in February 2017 and was referred to the Committee on Government Operations.

[SB 227 Environmental Justice](#) – Adopts plan for environmental justice. Bill was introduced by Senator Jim Ananich in March 2017 and was referred to the Committee on Natural Resources.

[SB 254 Underground Storage Tanks](#) – Modifies allowable expenditures for underground storage tanks in refined petroleum fund. Bill was introduced by Senator Mike Green in March 2017 and was referred to the Committee on Appropriations.

[SB 306 Downtown Development Authorities](#) – Modifies capture of certain mills for library. Bill was introduced by Senator Jack Brandenburg on April 20, 2017 and was referred to the Committee on Finance.

[SB 307 Corridor Improvement](#) – Modifies capture of certain mills for library. Bill was introduced by Senator Peter MacGregor on April 20, 2017 and was referred to the Committee on Finance.

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[HB 4007 Natural Resources](#) – Modifies setback for gas wells near certain residential areas under certain circumstances. Introduced by Representative Peter Lucido in January 2017 and was referred to the Committee on Energy Policy.

[HB 4008 Gas and Oil](#) – Establishes a drilling impact study and allocates funding. Introduced by Representative Peter Lucido in January 2017 and was referred to the Committee on Energy Policy.

[HB 4076 Data Altering](#) – Enacts sentencing guidelines for altering or tampering with data in an official report. Bill was introduced by Representative Klint Kesto in January 2017 and was referred to the Committee on Judiciary.

[HB 4120 Water Quality](#) - Requires testing levels of lead and other contaminants in water supplied to public schools. Amends 1976 PA 399 (MCL 325.1001 to 325.1023) by adding section 7a. Bill was introduced by Representative Adam Zemke in January 2017 and was referred to the Committee on Natural Resources.

[HB 4123 Environmental Cleanups](#) - Requires

cleanup to residential and safe drinking water standards unless technically infeasible. Amends 1994 PA 451 by amending section 20118, 20120a, 20120e and 20121 (MCL 324.20118, 324.20120a, 324.20120b, 324.20120e and 324.20121), sections 20118, 20120a and 20120b as amended and section 20121 as added by 2014 PA 542 and section 20120e as amended by 2012 PA 190. Bill was introduced by Representative Yousef Rabhi in January 2017 and was referred to the Committee on Natural Resources.

[HB 4124 Water Quality](#) - Provides for program for testing and removing lead in drinking water used by schools and child care centers. Amends 1976 PA 399 by amending section 2 (MCL 325.1002), as amended by 1998 PA 56 and by adding section 7a. Bill was introduced by Representative Sheldon Neeley in January 2017 and was referred to the Committee on Natural Resources.

[HB 4125 Water Quality](#) - Requires testing for lead and copper in drinking water and specifies procedures. Amends 1976 PA 399 by amending section 2 (MCL 325.1002), as amended by 1998 PA 56 and by adding sections 7a and 7b. Bill was introduced by Representative Phil Phelps in January 2017

and was referred to the Committee on Natural Resources.

[HB 4175 Drinking Water](#) - Creates a water emergency loan fund. Amends 1976 PA 399 (MCL 325.1001 to 325.1023) by adding section 11e. Bill was introduced by Representative Robert Kosowski in February 2017 and was referred to the Committee on Natural Resources.

[HB 4179 Drinking Water](#) - Authorizes the use of the safe drinking water revolving fund for replacing lead or galvanized service lines. Amends 1994 PA 451 by amending sections 5401 and 54003 (MCL 324.5401 and 324.5403), as added by 1997 PA 26. Bill was introduced by Representative Holly Hughes in February 2017 and was referred to the Committee on Natural Resources.

[HB 4189 Natural Resources](#) - Clarifies no net loss of Department of Natural Resources hunting acreage and extends to commercial forest. Amends 1994 PA 451 by amending section 504 (MCL 324.504), as amended by 2009 PA 47. Bill was introduced by Representative Pamela Hornberger in February 2017 and was referred to the Committee on Natural Resources.



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[HB 4200 Air Pollution](#) - Establishes air pollution control commission. Amends 1994 PA 451 by amending sections 5501 and 5522 (MCL 324.5501 and 324.5522), section 5501 as amended by 1998 PA 245 and section 5522 as amended by 2015 PA 60 and by adding sections 5501b and 5501d. Bill was introduced by Representative Stephanie Chang in February 2017 and was referred to the Committee on Natural Resources.

[HB 4201 Water Quality](#) - Provides oversight over the safe drinking water act. Amends 1976 PA 399 by amending section 3 (MCL 325.1003). Bill was introduced by Representative Sheldon Neeley in February 2017 and was referred to the Committee on Natural Resources.

[HB 4202 Gas and Oil](#) - Establishes oil and gas commission to oversee issuance of permits and promulgation of rules. Amends 1994 PA 451 by amending sections 61501, 61503, 61510, 61517, 61701, 61730, 61731, 61732, 61733, 62501, 62504, and 62514 (MCL 324.61501, 324.61503, 324.61510, 324.61517, 324.61701, 324.61730, 324.61731, 324.61732, 324.61733, 324.62501, 324.62504, and 324.62514), section 61501 as amended by 1998 PA 303, sections 61503, 61510, 61701, 61730, 61731, 61732, 61733, 62504, and 62514 as added by 1995 PA 57, section 61517 as

amended by 1998 PA 115, and section 62501 as amended by 1998 PA 467, and by adding sections 61502b, 61502d, 61702b, and 62503b. Bill was introduced by Representative Jeremy Moss in February 2017 and was referred to the Committee on Natural Resources.

[HB 4206 Water Quality](#) - Modifies process for collection of water. Amends 1976 PA 399 by amending section 7 (MCL 325.1007), as amended by 1998 PA 56. Bill was introduced by Representative Sheldon Neeley in February 2017 and was referred to the Committee on Natural Resources.

[HB 4214 Water Pollution](#) - Establishes water resources commission. Amends 1994 PA 451 by amending sections 3101, 3102, 3112, 3113 and 3120 (MCL 324.3101, 324.3102, 324.3112, 324.3113 and 324.3120), section 3101 as amended by 2015 PA 247, section 3112 as amended by 2005 PA 33, section 3113 as amended by 2004 PA 91 and section 3120 as amended by 2015 PA 82 and by adding section 3102a. Bill was introduced by Representative Phil Phelps in February 2017 and was referred to the Committee on Natural Resources.

[HB 4231 DEQ Budget](#) - Provide for Department of Environmental Quality budget

for the 2017-18 fiscal year.

[HB 4247 Property](#) - Enacts prohibition on reserving mineral rights to property conveyed by this state. Amends 1984 PA 431 (MCL 18.1101 to 18.1594) by adding section 255. Bill was introduced by Representative Michele Hoitenga in February 2017 and was referred to the Committee on Natural Resources.

[HB 4255 Environmental Protection](#) - Requires reduction of air emissions during certain months. Amends 1994 PA 451 (MCL 324.101 to 324.90106) by adding section 5506a. Bill was introduced by Representative Abdullah Hammoud in February 2017 and was referred to the Committee on Natural Resources.

[HB 4256 Air Pollution](#) - Revises air quality index reporting and forecasting program and restricts emissions during thermal inversions. Amends 1994 PA 451 (MCL 324.101 to 324.90106) by adding section 5543. Bill was introduced by Representative Stephanie Chang in February 2017 and was referred to the Committee on Natural Resources.

[HB 4281 Natural Resources](#) - Provides for civil fines for providing false information on applications, reports or documents submitted to the Department of Natural Resources or Environmental Quality. Amends 1994 PA 451

(MCL 324.101 to 324.90106) by adding section 1521. Bill was introduced by Representative Robert Kosowski in February 2017 and was referred to the Committee on Natural Resources.

[HB 4309 Environmental Protection](#) - Prohibits use and sale of coal tar sealant or other high PAH sealant for pavement. Bill was introduced by Representative Kristy Pagan in March 2017 and was referred to the Committee on Natural Resources.

[HB 4339 Lead-free Pipes](#) – Revises definition of lead-free pipes and pipe fittings to federal safe drinking water language. Bill was introduced by Representative Robert Kosowski in March 2017 and referred to the Committee on Regulatory Reform.

[HB 4352 Environmental Protection](#) – Adopts plan for environmental justice. Bill was introduced by the Representative Winnie Brinks in March 2017 and referred to the Committee on Natural Resources.

[HB 4372 Water Quality](#) – Requires testing for levels of lead and other contaminants in water supplied to colleges and universities. Bill was introduced by Representative Robert Kosowski in March 2017 and referred to the Committee on Natural Resources.

[HB 4375 Water Ombudsman](#) – Creates a water ombudsman. Bill was introduced by Representative Sheldon Neeley in March 2017 and was referred to the Committee on Natural Resources.

[HB 4378 Water Quality](#) – Requires testing for levels of lead and other contaminants in water supplied to nonpublic schools. Bill was introduced by Representative Robert Kosowski in March 2017 and referred to the Committee on Natural Resources.

[HB 4379 Water Quality](#) – Requires testing for levels of lead and other contaminants in water supplied to hospitals. Bill was introduced by Representative Robert Kosowski in March 2017 and referred to the Committee on Natural Resources.

[HB 4402 Inland Lakes](#) – Exempts installation of stream gauges from permit requirements. Bill was introduced by Representative Donna Lasinski in March 2017 and referred to the Committee on Natural Resources.

[HB 4437 Flint Supplemental](#) – Appropriates funding for drinking water emergency. Bill was introduced by Representative Phil Phelps in March 2017 and referred to the Committee on Appropriations.

[HR 61 Nestle](#) - A resolution to urge the Governor and the Department of Environmental Quality to reject Nestlé Waters North America Inc.'s application for an increased water withdrawal. House Resolution introduced by Representative Robert Wittenberg on April 19, 2017.

[HCR 6 Nestle Permit](#) - A concurrent resolution to urge the Governor and the Department of Environmental Quality to reject Nestlé Waters North America Inc.'s application for an increased water withdrawal. House Concurrent Resolution introduced by Representative Terry Sabo on April 19, 2017.

[SCR 6 Nuclear Waste Funds](#) - Memorializes the Congress of the United States to appropriate funds from the Nuclear Waste Fund for the establishment of a permanent repository for high-level nuclear waste or reimburse electric utility customers that paid into the fund. Senate Concurrent Resolution introduced by Senator John Proos on February 8, 2017 and adopted in the Senate on March 8, 2017 and the House on April 19, 2017.

[SCR 8 High-Level Nuclear Waste](#) - Urges the U.S. Department of Energy and the U.S. Nuclear Regulatory Commission to fulfill their obligation to establish a permanent solution for handling high-level nuclear waste. Senate Concurrent Resolution introduced by Senator Dale Zorn on February 8, 2017 and adopted in the Senate on March 8, 2017 and the House on April 19, 2017.

[SCR 9 Nuclear Fuel](#) - Urges the president and Congress of the United States to explore and support policies that will lead to the establishment of facilities within the United States for the reprocessing and recycling of spent nuclear fuel. Senate Concurrent Resolution introduced by Senator John Proos on February 8, 2017 and adopted in the Senate on March 8, 2017 and the House on April 19, 2017.

#### **BILLS UP FOR LEGISLATIVE CONSIDERATION FROM 2016**

[SB 1157 Pollution Prevention](#) - Prohibits use and sale of coal tar sealant or other high PAH sealants for pavement. Bill was introduced by Senator Rebekah Warren in November 2016 and was referred to the Committee on Transportation.

[HB 5862 Mining](#)—Eliminates inland lakes and streams permit requirements. Bill was introduced by Representative Andrea LaFontaine in September 2016 and was referred to the Committee on Natural Resources.

[HB 5856 Brownfield Redevelopment Authority](#)— Eliminates ability to capture future special millages. Passed in House and was referred to the Senate Committee on Economic Development and International Investment.

[HB 6024 Environmental Protection](#) - Requires cleanup to residential and safe drinking water standards unless technically infeasible. Bill was introduced by Representative Jeff Irwin in November 2016 and was referred to the Committee on Natural Resources.

[HB 6025 Environmental Protection](#) - Provides process for development of cleanups criteria and extends sunset. Bill was introduced by Representative Jeff Irwin in November 2016 and was referred to the Committee on Natural Resources.

[HB 6027 Environmental Protection](#) - Requires permits for industrial facility within certain distance of residential or other uses to have vegetative buffer or buy-out of dwellings. Bill was introduced by Representative Stephanie Chang in November 2016 and was referred to the Committee on Natural Resources.

[HB 6028 Air Pollution](#) - Creates ombudsman for air quality. Bill was introduced by Representative Stephanie Chang in November 2016 and was referred to the Committee on Government Operations.

[HB 6038 Environmental Protection](#) - Creates commission of environmental quality. Bill was introduced by Representative Stephanie Chang in November 2016 and was referred to the Committee on Government Operations.

## 2016 Michigan Section Educational Award

The Michigan Section offers a grant to Michigan educators to help fund geological related projects, trips, and materials for K-12 teachers. This award has been offered for several years, but often no applications are received.

In 2016, Anette Cole of the Central School in Traverse City applied for the Educational Award. The Executive Committee reviewed the application material and awarded the Central School \$1,000 to purchase new FOSS science kits aligned with Next Generation Science Standards to replace their outdated and inadequate earth science kits. In addition, and due to a fortuitous coincidence in timing, we were also able to provide them with several boxes of rocks and minerals that a school in Farmington was going to dispose of. Past President Dawn Prell took the rocks



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and the check to Ms. Cole to present to her in December.

The new materials that the Central School has received were warmly appreciated, and one of their 5<sup>th</sup> grade classes prepared a thank-you note to the Michigan Section; a copy of their note is attached to this newsletter. The third page of the note shows members of their classes using their new materials.

This is an example of one of the things the Michigan Section is doing to support the geosciences. The Executive Committee would like to extend its appreciation to all its members for their support.

## 2017 Summer Field Trip

We are in the process of finalizing the details for the upcoming joint summer fieldtrip of the Michigan and Wisconsin Sections. The 2017 summer field trip is scheduled for the weekend of Friday, August 11 through Sunday, August 13, 2017. We will meet in the Porcupine Mountain Wilderness State Park (PMSP) area Friday evening for burgers and a fish broil. Lodging is available at the park and nearby in various private and public campgrounds and motels.

Professor Tom Fitz of the Northland College Geoscience Department in Ashland, Wisconsin will lead the first day of the trip, and graduate student Marine Foucher of Michigan Technological University in

Houghton, MI will lead the second day. We will leave each day by bus from a central location near PMSP. Saturday we will travel 1.5 hours to start our trip in Mellen, Wisconsin (leaving Saturday 8:30 AM EST, 7:30 AM CST) to examine the rocks exposed in the south limb of the Lake Superior Syncline, starting with Archean rocks, then heading east to look at Oronto Group rocks at the mouth of the Montreal River.

We meet Sunday to examine the geology of the rocks of the Keweenaw Supergroup and related intrusives of the Midcontinent Rift that are exposed in the PMSP area. Fantastic exposures of the Copper Harbor Conglomerate and the Nonesuch Shale (which show various sedimentary structures and are prevalent along the Presque Isle River in PMSP) will be viewed; we will also have access to outcrops of volcanic intrusives of the Portage Lake Lava Series and the summit above Lake of the Clouds. We will spend time at former mine locations in the Ontonagon area outside PMSP, and look for agates on Lake Superior.

Full information will be provided in an upcoming announcement flyer, and registration will be online through Eventbrite. It will be a great trip with beautiful summer weather, fabulous rocks and fun with your family and new friends you'll make on the trip. Please try to include us in your summer vacation plans for 2017; the western U.P. of

Michigan and the northeast part of Wisconsin are calling our names. With geologic diversity, beautiful vistas, and sunsets and the trip will be pure enjoyment!

Linda Hensel

## 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.

## Student Scholarship

Students, this is a final reminder for 2017 about the Michigan Section's annual scholarship program. Full details and information are in the scholarship program application document attached to this newsletter.

The scholarship amount for 2017 is \$4,000, which will be awarded to an eligible undergraduate student member of the

Michigan Section. Your application materials must be received by Tim Woodburne no later than June 1, 2017.

## 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:

Matthew D'Addona (SA-8515).

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 March edition of the newsletter featured a photograph of Skull Cave on Mackinac Island; the rock is the Late Silurian to Middle Devonian age Mackinac Breccia. The photograph was correctly identified by several members, including Mark Petrie, who was the winner of the contest for the March edition.

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.

## Did You Know?

*This article is intended to remind members of various aspects of AIPG and benefits of membership. If there is something you would like to see featured in this column, please contact the Editor...*

According to the Section 2.2.7 of the AIPG Bylaws, "A Member may be designated "Non-Practicing" upon request at the age of 60 or older, provided that the Member is no longer actively engaged in the practice of geology for financial gain. The Executive Committee shall have the authority to reduce or waive dues payments for Non-Practicing Members, individually or as a category."

## 13<sup>th</sup> Annual Michigan Section Golf Outing

13th Annual Golf Outing-Tuesday May 16, 2017

REMINDER...Now is the time to Sign Up for the AIPG Michigan Section golf outing.

Please register using Eventbrite: <https://www.eventbrite.com/e/aipg-michigan-section-golf-outing-2017-tickets-30142479969?aff=eac2> or e-mail the attached registration form to Bob Reichenbach [bob.reichenbach@ERGrp.net](mailto:bob.reichenbach@ERGrp.net).

Sponsorships and spots for golfers are available.



One of the foursomes from last year's outing. Photo courtesy of Bob Reichenbach.

The AIPG K-12 Education Grant fund has provided thousands of dollars to a variety of worthy projects, made possible in part to the money raised through our annual golf outing. Your generosity has been, and will continue to be, the key to enabling organizations and schools to provide meaningful environmental educational programs and activities in the Geosciences.

Thank you for your support!

Bob Reichenbach, Golf Outing Chairman

## 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.

## Student Chapter News

The Michigan Section supports our student chapters in a number of ways. We offer the students free entry to our meetings, provide networking and mentoring, have student poster contests, and support a student scholarship. For each of the chapters that provides an annual report of their activities prior to the end of the school year, holds annual election of officers, and updates their member roster to the Section and National,

the Section provides additional support to the chapter in support of its activities.

The CMU and WMU student chapters have provided their annual reports to the Executive Committee, and will be receiving their annual support. A copy of their reports is attached to this newsletter. Check them out and see what our students have been up to if you haven't been to a meeting recently!

## Michigan Department of Environmental Quality News

### RRD Steps Up Project Converting Paper to Electronic Format and You Can Help

The Remediation and Redevelopment Division (RRD) is moving forward with the conversion of paper files to electronic format to help streamline requests for documents via the Freedom of Information Act, improve document storage, and help staff access documents quickly. These files serve as the official record, and the DEQ is tasked with maintaining and storing them.

The Grand Rapids District Office is the only office where all files have been converted to electronic format and all submittals received daily are continuing to be added to the electronic filing cabinet. Two more offices have joined the Grand Rapids office and have started the process of converting existing paper files to electronic format. The Southeast Michigan District and Jackson District offices have begun converting existing files and also new documents received daily. The remaining offices will be added over the next three years.

There are thousands of files being converted for electronic storage, and during this process the DEQ has found that there are many documents like Baseline Environmental Assessments (BEAs) containing duplicate file information. As part of the historical evaluation, the DEQ's files are reviewed for a BEA and are often appended as supporting document which results in a duplication of the exact same documents already in the file. Storage of the documents costs the DEQ thousands each year and storing duplicate information is not cost effective.

The DEQ is requesting your assistance with the submittal of BEAs and other documents where existing file information tends to be duplicated. It is acceptable to reference the file information and not append it to the document. However, if there are figures and summary tables or other pertinent pieces of information that are useful to demonstrate

that the property is a facility, please include them in the report and reference the rest of the information. This project has also brought other items to light that are important to check for when submitting documents.

Some documents contain personally identifiable information like social security numbers, personal checks, and pictures of driver's licenses. This type of information poses a potential for identity theft. The DEQ is actively working to redact this information from the files and would like your assistance in ensuring that it is not included in the reports being submitted.

Legibility of pages in documents is also a concern and something that you can help the DEQ with by ensuring that illegible pages are not included in the reports. The DEQ has received some reports that contain pages that have small photocopies of multiple pages that cannot be read. There are some documents with very poor quality reproductions that are illegible. If a page cannot be read, how is it useful information?

The DEQ's goal is to ensure that the records on file are maintained in an easily accessible format and are useful to all who work with them. If you have any questions about how you can help the RRD, please feel free to contact RRD's Sara Pearson [pearsons@michigan.gov](mailto:pearsons@michigan.gov) or Nick Ekel [ekeln@michigan.gov](mailto:ekeln@michigan.gov).

Article provided by Sara Verbrugge-Pearson, CPG – MDEQ RRD Unit Supervisor

## 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 [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 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.

The Quest to make a Crystal Harder than Diamonds:  
[http://www.bbc.com/future/story/20160818-the-quest-to-make-a-crystal-harder-than-diamonds?ocid=global\\_future\\_rss](http://www.bbc.com/future/story/20160818-the-quest-to-make-a-crystal-harder-than-diamonds?ocid=global_future_rss).

World's Oldest Fossils Found in Greenland:  
<http://www.nytimes.com/2016/09/01/science/oldest-fossils-on-earth.html?smid=pl-share&r=0>.

## 2017 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...

### 2017 AIPG Michigan Section Executive Committee



Past President  
Brian Burke



President  
Linda Hensel



Vice President  
Tim Woodburne



Treasurer  
Amy Hoeskema



Secretary  
Sara Pearson



Newsletter Editor  
Adam Heft

## 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.

No employment ads or seeking employment ads were received by the editor for this edition of the newsletter.

## 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 Member's Corner articles were received for this edition of the newsletter.

## Coming Events

May 16, 2017: [13<sup>th</sup> Annual Michigan Section AIPG Golf Outing](#) at Moose Ridge Golf Course in South Lyon. Full details, including sponsorship and registration information, are attached to this newsletter, and are also available on the Michigan Section website at: <http://mi.aipg.org/Golf/golf.htm>.

June 13-14, 2017: [7<sup>th</sup> Annual Michigan Section AIPG Environmental Risk Management Workshop](#), RAM Center, Roscommon. Topic: Characterization for Remedy Decision.

August 11-13, 2017: Joint Michigan and Wisconsin Section summer field trip to the western Upper Peninsula of Michigan and northeastern Wisconsin. Additional details forthcoming.

September 12, 2017: Joint Michigan Section AIPG and MAEP Meeting. Location and speaker information TBA.

**September 23-26, 2017:** 54th Annual AIPG Meeting to be held in Nashville, TN. Complete meeting and registration details forthcoming in the April, May, June 2017 issue of TPG.

**Fall 2018:** 55th Annual AIPG Meeting to be held in Colorado Springs, CO.

**Fall 2019:** 56th Annual AIPG Meeting to be held in the Northeast Section; location TBD.

**Fall 2020:** 57th Annual AIPG Meeting to be held in California; location TBD.

**Fall 2021:** 58th Annual AIPG Meeting to be held in the Michigan Section; location TBA.

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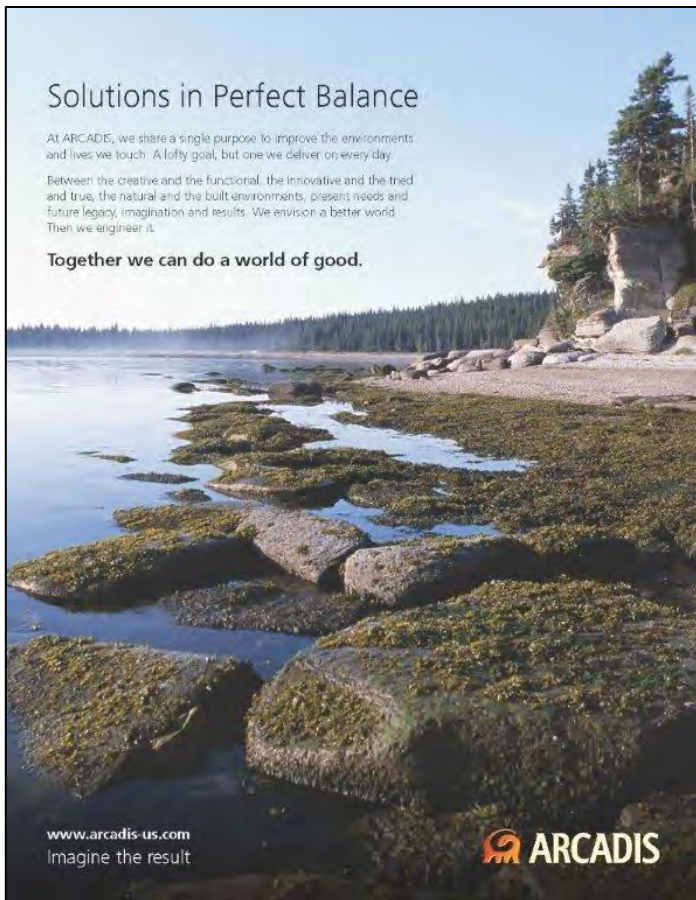
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Photos, top to bottom: John Shook and John Yellich, Joe Macki and Linda Hensel, John Yellich and WMU students. All photos from the joint AIPG/MBGS April meeting. Photos courtesy of Adam Heft.

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## 2017 Application

# Michigan Section AIPG Scholarship

### **Purpose**

The Michigan Section of the American Institute of Professional Geologists (AIPG) is committed to supporting undergraduate scholarships to students majoring in geology with college education costs and encourages student participation in AIPG.

### **Scholarship Award - \$4,000.00**

The scholarship will be paid to an eligible student attending an accredited college or university in the State of Michigan.

### **Eligibility Requirements**

The following requirements apply to students applying for the scholarship:

- Must be an undergraduate student enrolled in a geological science program at an accredited college or university in the State of Michigan
- Must be at least a sophomore
- Must be a student member of AIPG at the time of application for the scholarship
- Must have an overall GPA of 3.0 (on a 4.0 scale) and a GPA of at least 3.5 in geology at the time of application

Students can apply for AIPG membership online at <http://aipg.org/becomestudentmember>.

Each student who is awarded a scholarship agrees, by accepting the scholarship, to prepare a 400+ word article for publication in the *Michigan Section's Newsletter*. The subject of the article must be related to a timely professional issue.

## **Application Process**

1. Submit a cover letter introducing yourself and tell us what you have done outside of the classroom such as research projects, officer in club, or outside activities within the community. Address your career goals in near term and longer term.
2. Submit an essay on “Why I Want to be a Geologist”
3. Submit a copy of your transcript (unofficial is acceptable) as documentation that you are a current student, and documentation indicating you have declared a major in geology/geoscience.
4. Submit a letter of recommendation from a geology/geoscience professor that provides an emphasis on your performance and activities in the classroom, in the department, and your character in how you work and help other students.

Please submit the application packet to:

Attn: MI-AIPG Scholarship Committee Chr.  
Mr. Timothy B. Woodburne, C.P.G.  
Prein&Newhof  
3355 Evergreen Drive, NE  
Grand Rapids, MI 49525  
e-mail: [twoodburne@preinnewhof.com](mailto:twoodburne@preinnewhof.com)

Questions? Please contact Tim Woodburne at (616) 364-8491 or via e-mail: [twoodburne@preinnewhof.com](mailto:twoodburne@preinnewhof.com).

## **Application Deadline and Award Date**

Completed applications must be received by June 1, 2017. The scholarship awardee will be notified no later than June 30, 2017. The presentation of the scholarship shall be made to the student at The Michigan Section Meeting on September 7, 2017; the student is expected to attend the meeting.

## **Basis of Awards**

The scholarship award will be based on the cover letter, the letter of recommendation, transcripts, and the content and creativity of the essay as judged by the Scholarship Committee. Financial need is not a consideration for the basis of the award.

# 13th Annual AIPG Michigan Section Golf Outing Tuesday May 16, 2017

The 13<sup>th</sup> Annual AIPG Michigan Section Golf Outing promises to be our best yet. Proceeds generated from this fantastic event 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.

We are returning to the rolling topography of 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 16, 2017

**Registration:** 8:00 to 9:15 am

**Shotgun Start:** 9:30

Rainout Date: May 18, 2017 (based on availability)

## Registration

Register/Pay by April 15, \$600/foursome, \$180/Individual  
Register/Pay after April 15, \$680/foursome, \$200/Individual

Golfer 1: \_\_\_\_\_

Golfer 2: \_\_\_\_\_

Golfer 3: \_\_\_\_\_

Golfer 4: \_\_\_\_\_

**Accepted forms of payment include:**

Eventbrite

<https://www.eventbrite.com/e/aipg-michigan-section-golf-outing-2017-tickets-30142479969?aff=eac2>



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](mailto:bob.reichenbach@ergrp.net)

**Company:** \_\_\_\_\_

**Contact:** \_\_\_\_\_

**Email:** \_\_\_\_\_

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:** \_\_\_\_\_

*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 participants.*

# 13th Annual AIPG Michigan Section Golf Outing

## Tuesday May 16, 2017

### 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 - \$250**

(36 available)

##### **Investment includes:**

- Tee box signage or
- Pin Flag with logo

#### **Skill Sponsors – \$600**

##### **Investment includes:**

(4 available)

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

#### **Practice Tee Sponsor – \$400**

##### **Investment includes:**

(1 available)

Exclusive Signage at the Practice Tee

**Putt-4-Dough – \$800** 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** - if your photographer and printer

**\$700 SPONSOR FEE** - if our photographer and printer

#### **Raffle Prize Sponsors:**

Will contribute prizes (**\$100** minimum cash or 2 prizes with \$50 minimum value each, please) to the fund used to obtain raffle prizes. Recognition by name on prize table placards will be made, along with verbal recognition by the master of ceremonies. \$100 SPONSOR FEE ("lots" needed)

#### **Goodie Bag Sponsor - Give-away items for 140 or more golfers**

## 2016/2017 OFFICERS

Josh Cichy

– President



Garret Nowakowski

– Vice President



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# AIPG

## Annual Report

### Central Michigan University - Student Chapter



#### Involvement -

As members of the Central Michigan University Chapter of AIPG, it is important to share our knowledge with our community and represent geology as a profession. Members of our chapter attended several events this year. Boo Bash and Kid's Day were two activities in which young children and their family members met the student organizations from Central Michigan University. We also facilitated and supervised the Science Olympiad at Mid-Michigan Community College. This year we prepared our student organization to be utilized to its maximum potential for the upcoming fall semester. Our Geology Club at Central Michigan University was dissolved so we may achieve bigger and better goals with the student chapter AIPG. This year was great, but next year will be even better!

#### Organization Stats:

Active Members - 18

Weekly meetings - 14. We had to share with Geology Club.

# Fall Semester 2016

## Boo Bash and Kids Day

Since the student chapter AIPG has been established at Central Michigan University, it has always been active within the community of Mt. Pleasant. For the past couple years our student chapter has been involved with our local radio station My 104.3. Every Halloween they hold the Boo Bash. While every spring they hold the Kids Day Expo. Both events are oriented for the youth to have fun and meet

student organizations and local businesses. We have brought fossils, posters, display rocks, and we pass out candy, rocks, and minerals. Typically, one or two children stay at our booth and play with the fossils and rocks. We love attending this because we get to represent our organization, university, and geology.



Figure 1 - Megan Miller at Kids Day.

## Professional Development Days

Besides participating in our community, we try to develop our professional skills. We had two faculty members speak at our chapter meetings this fall regarding how to start research and how to become more engaged students within our department.

We also had a business card development day! On this particular meeting our members drafted up ideas for their own personal business cards to create and pass out at events.

As aspiring Geologists, we have to think about the past, as well as the future. The faculty here at Central Michigan University also invite guest speakers to talk about their research. Many AIPG students attend these lectures to get a better idea as to what our futures hold.

Lindsey Stone  
-Secretary



Georgina Gill  
-Treasurer



# Spring Semester 2016

## Spring Break Field Trip 2017 – Puerto Rico

Josh Cichy – President



Megan Miller – Vice President



Lindsey Stone - Secretary



Georgina Gill -Treasurer



Preparation for the Spring Break 2018 field trip is heavily underway. From March 3<sup>rd</sup> to the 11<sup>th</sup> the CMU AIPG Student Chapter is planning on going to Puerto Rico with the guidance of our faculty members. Here vast carbonate rocks along the shorelines as well as Cretaceous carbonates caverns can be explored. The island also has a large variety of roadside outcrops of pillow basalts, ocean floor volcanism, exposed faults, laccoliths, and much more. Day trips of snorkeling on patch reefs, a visit to the University of Puerto Rico, as well as cultural locations are in the planning process and are well anticipated by the students.

## Rock and Mineral Sales 2017

This semester we had two rock and mineral sales. Our first sale was fun and made us realize how we could improve for the next time. The second sale was much more successful and it may have been due to the theme, “The Rock’n Bake Sale”. At this sale we sold Rocks, Minerals, Baked Goods, and Vinyl Records! People walking down the hall all stopped and visited our station. The vinyl records were a big hit with the students on campus, selling vinyl records and baked goods will become a staple of our future sales.





# Upcoming Academic Year

This upcoming year our student organization is planning to attend the 2017 AIPG National Conference in Nashville, TN. Being able to drive to Tennessee with our student members to connect with our national organization along with all the other student organizations seems like a fantastic way to become even more involved with AIPG.



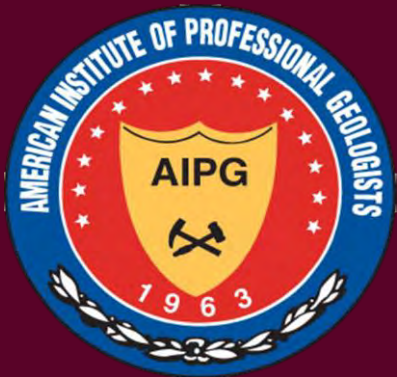
February 9<sup>th</sup>, 2017 we held the Michigan AIPG Section meeting in the University Center at Central Michigan University.



Last official meeting of the 2016/2017 academic year! Thank you to all the officers, members, faculty, and friends who help support this fantastic student organization. Fire Up!



Thank you to all the officers who have spent their valuable time dedicated to this organization. Congratulations to the new members of our organization, we will work side by side to ensure the student chapter AIPG puts its stamp on the world.



Student Chapter  
Supports Local  
Students

On our last official meeting of the year our members made rock identification bags for elementary students since one of our member's relative is a teacher.



# AIPG Annual Report

## Western Michigan University Student Chapter



2016-2017



Quick Facts about  
WMU AIPG

Active Members

**19**

Weekly Chapter  
Meetings

**27**

One-on-One  
Professional  
Advising Sessions

**2**

Mineral and Bake  
Sales

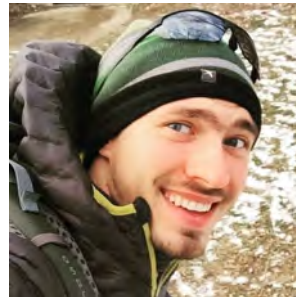
**6**

Approximate  
Earnings

**\$950**

### Officers for the 2016-2017 Academic Year

The leadership has continued to organize events and provide planning for the members. Jake Tholen is completing his third year serving as President. Joy Kiefer served as Acting President during Jake's absences. Julia Raffenaud has invigorated the club by designing a new Geology Club logo for our stickers, posters, and t-shirts. Erin Huggett expanded our mineral sales to include geology-themed baked goods.



President  
Jake Tholen



Vice President  
Joy Kiefer



Secretary  
Julia Raffenaud



Treasurer  
Erin Huggett

## Geology Club Tackles the Pacific Northwest



In the most ambitious Geology Club summer field trip in recent memory, 16 students and accompanying professor Dr. Heather Petcovic took an 11-day excursion to Washington and Oregon. The itinerary included notable sites of geologic significance. The route snaked around Olympic National Park before

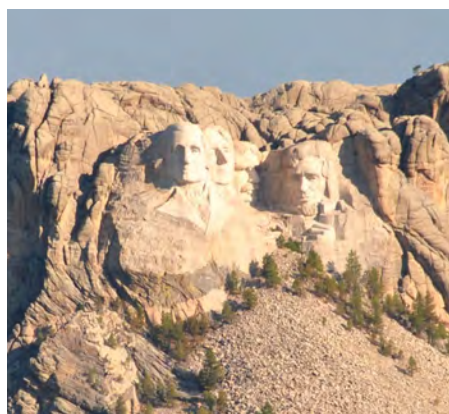
reaching a cloudless Mount Rainier. A pilgrimage to Mount Saint Helens put geohazards in an entirely new context. Volcanics on a smaller scale were observed at Newberry Volcanic National Monument and Lava River Cave. Portland, Oregon provided a chance to recharge, clean up, and fantastic donuts before

a final stop at Mt. Hood. Students considered geomorphology along the Columbia River Gorge during the return to the Portland Airport. For many students, this was their first time on the West Coast. Support from AIPG minimized the costs for the students, who only paid \$100 each.




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## Preparing for the 2017 Annual Field Trip: Black Hills



The Geology Club is gearing up for its next annual summer field trip to the Black Hills of South Dakota! Highlights include the Badlands, Mount Rushmore, Wind Cave, and Devils Tower. The Black Hills cover a wide variety of geologic concepts—uplift, erosion, sedimentary, metamorphic, and igneous

rocks, caves, volcanoes, fossils, mining, and more! 15 students and Dr. Heather Petcovic are making the trip this year. Everyone is currently putting the finishing touches on their papers, which will be collected to make the field guide. The trip is being held April 30—May 8.

## Halloween Party with Geologic Significance

Geosciences Department staff member Tom Howe hosted a Geology Club Halloween Party with an appropriate movie for the geologically-savvy crowd: *Monster on the Campus*. This 50's horror film had it all: excitement, romance, and a coelacanth with "anti-evolutionary DNA"!



*"The blood of a primitive fish exposed to gamma rays causes a benign research professor to regress to an ape-like, bloodthirsty prehistoric hominid."*

## Mineral Sales and Bake Sales

Geoscience students Erin Huggett and Mollie McCormick have successfully revived Bake Sales as a component of our monthly Mineral Sales. Not content with simple baked goods, unique items like Trilo-BITE shortbread cookies and Banded Iron

Formation brownies were a hit with students and professors alike. The funds brought in from these sales continue to support field trips and events for the student membership and keep the club dues-free.



## Trips to Devils Punchbowl and Cranbrook

Four students took a sunny afternoon hike to look at glacial landforms north of campus in October. A particularly steep kettle known as Devils Punchbowl was the highlight. On a separate trip, three cars full of students went to the

Cranbrook Institute of Science. Everyone observed the mineral collection with mouth agape. The center also hosted a number of samples from areas students had been to on previous trips or excursions.



# W



## Zinc outside the Bauxite

One of our largest fundraisers is the sale of groundwater model kits. These systems demonstrate difficult hydrogeologic concepts for students and visitors to see in person. Built originally by Richard Passero, these kits are available in a traditional aquifer and septic tank varieties. We ship around the country!

If interested, send an email to [wmugeologyclub@gmail.com](mailto:wmugeologyclub@gmail.com)



## New Officers Elected for 2017-2018 Academic Year

As elected by the club members, our new executive board is led by President Erin Hugget, the Treasurer from the 2016-2017 Academic Year. Joining her as Vice President is Shelby Hurst, a doctoral student studying isotopes. Sophomore Stephanie Buglione won a competitive election to be selected as our new Treasurer. Julia Raffenaud has retained her position as Secretary. Congratulations to our new leadership!



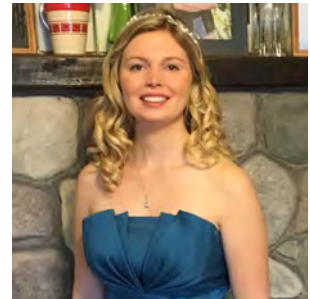
President  
Erin Huggett



Vice President  
Shelby Hurst



Secretary  
Julia Raffenaud



Treasurer  
Stephanie Buglione

1975

Thank  
You  
Very Much

for  
your  
support



Leland Stone

Eva

Aadnan

Esme

Colleen

Thank you all your support

Emma

Cici

TYSM hood-  
a n k h

Henry!

Petra

Katy

Thank  
you  
so  
awesome

Sam

Thank You So much for  
Spending Your money to make  
our learning more enjoyable,  
and more educational. -Joy

KYLE

Thanks-  
Margot

Thank  
you  
so  
much  
-Alak

Thank you!  
-Maya

Thank you  
-Sawyer

Allie!

Ladyson

Isabel's

Friend,

Thank you so much  
for the money and time  
Spent on us!  
-Annika

Jackson  
-Thanks!  
Hayden

Caden &  
Jaiden

Sophia

Lauren

Brynn

Leland  
Vincent

Summer

Ziley

Andrews

on

Conner

Maddie

Avali

Thank you  
You Rock  
-Lucy  
-Natalie

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U.R. 500  
L  
AWESOME!

Thanks!  
-Emily

Thanks for the  
science kits