



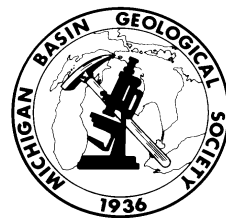
ON THE ROCKS

A Newsletter of the Michigan Basin Geological Society

2017-2018 Edition 8

www.mbgs.org

April 2018



MBGS ANNOUNCEMENTS

MONTHLY MEETING

MBGS Annual BBQ Meeting: The April meeting will be held on April 25th, 2018 at Western Michigan University in the Michigan Geological Repository for Research and Education Building, Kalamazoo, Michigan. A BBQ style dinner will be available for members. Western Michigan University geology students will present short talks covering their areas of recent research. Cost: \$25 members; \$10 students. Social hour - 5:00PM, dinner - 5:30PM, presentations - 7:00PM. **Reservation are requested, please email John Yellich at john.a.yellich@wmich.edu.**

MBGS SCHOLARSHIP AVAILABLE

The Michigan Basin Geological Society will award one or more scholarships of up to \$500 to graduate or undergraduate students conducting research in Earth science related to Michigan. The scholarships will be awarded at an upcoming MBGS meeting. Candidates should complete and submit the Michigan Basin Geological Society scholarship application form by April 6, 2018 to: John A. Yellich, MBGS Secretary john.a.yellich@wmich.edu Include "MBGS Scholarship 2018" in the subject line. A copy of the application is included in the newsletter or for more information visit the MBGS website <http://www.mbgs.org/geology-student-scholarships>

MBGS VOLUNTEERS NEEDED

MBGS will be hosting a booth at the MDEQ/MDNR Earth Day Celebration at Constitution Hall in Lansing, Michigan on April 19th, 2018. If you are interested in volunteering a few hours, please contact Peter Rose at Rosep1@michigan.gov for more information. Information on the event is included on page 9 of the newsletter.

MBGS FIELD EXCURSIONS

April 13-15th, 2018 – GEOLOGIST RETREAT – YANKEE SPRINGS

The MBGS is hosting a "retreat" for our membership at Yankee Springs Recreation Area on April 13th through April 15th (Friday – Sunday). Rustic cabins/bunkhouses are reserved and we have room for 15 members to attend. This social event will include a geological presentation on the glacial landforms at Yankee Springs by Dr. Robb Gillespie, Assistant Professor of Geosciences, Western Michigan University. Friday evening and Saturday evening will be available as social time for the geologists to mingle and relax. Keep the weekend open and plan to join us!

September 7th, 2018 – MICHIGAN BASIN GEOLOGICAL SOCIETY FIELD EXCURSION

Ice Mountain Bottling Plant and Site Visit, Nestle Waters North America

Plant Tour, presentations and site visit, 10:30AM – 2:30PM, more details coming soon. Participants limited so email Mark Wollensak at wollensak@voyager.net to get your name on the attendees list.

SPRING 2020 - GEOLOGICAL EXCURSION BY RAFT ON THE COLORADO RIVER THROUGH THE GRAND CANYON

LEE'S FERRY TO WHITMORE WASH (PAGE, ARIZONA)

A 7-day Grand Canyon rafting trip through Hatch includes: 188 miles of rafting from Lee's Ferry to Whitmore Wash, pre-trip stay at Cliff Dwellers Lodge, helicopter ride & return flight to Las Vegas or Marble Canyon, and meals, beverages, camping gear and dry bags provided by Hatch while on the river. Contact Mark Wollensak at wollensak@voyager.net to get more information or reserve your spot on this trip.



Michigan Basin Geological Society

April 2018 Membership Meeting

When:	Wednesday, April 25th, 2018
Location:	Michigan Geological Repository for Research and Education Building, Kalamazoo
Time:	Social hour - 5:00PM, dinner - 5:30PM, presentations - 7:00PM
Topic:	Western Michigan Geology Student Presentations
Costs:	Cost: \$25 members; \$10 students

MBGS asks that you reply with your affirmation to attend the meeting and BBQ so that we may estimate the number of attendees. You may request a vegetarian option when making reservations. Please bring your money and email John Yellich with your concurrence to attend to: john.a.yellich@wmich.edu

Michigan Geological Repository for Research and Education



5272 W. Michigan Avenue, Kalamazoo, MI 49006--(269) 387-8633

From the East or West

- From I-94, exit onto US 131 North and drive ~2.5 miles to exit 36A.
- Then follow directions below under "From the North or South."

From the North or South

- From US 131, take exit #36A onto Stadium Drive East and immediately get into the leftmost lane. Go 0.3 miles to the stoplight at Drake Road.
- Turn left onto Drake Road and go 0.3 miles to W. Michigan Avenue.
- Turn left onto W. Michigan Avenue and go 0.3 miles.
- Turn right at the last driveway on the right before the US 131 overpass.
- Go through the open gates and immediately turn left. Follow the drive to the biggest building you see—there's a big sign at the top that says "Western Michigan University."

UPCOMING EVENTS



April 12th, 2018: Michigan Section AIPG Meeting, University Center of Central Michigan University, Mt. Pleasant. Stephan Hlohowskyj, Ph.D. student, will be speaking on “A Geologist’s Journey to the Galapagos: How the Climate Influences Geochemistry.”

April 13-15th, 2018: MBGS Geologist Retreat– YANKEE SPRINGS, Michigan, information included in the newsletter.

April 19th, 2018: The Department of Environmental Quality (DEQ), the Department of Natural Resources (DNR), and the Michigan Department of Agriculture and Rural Development (MDARD) will come together to celebrate Earth Day at Constitution Hall in Lansing, Michigan. http://www.michigan.gov/deq/0,4561,7-135-3307_3580_66835---,00.html

April 25th, 2018: MBGS Annual BBQ at Western Michigan University in the Michigan Geological Repository for Research and Education Building, Kalamazoo, Michigan.

May 15th, 2018: Michigan Section AIPG Golf Outing, Moose Ridge Golf Course, South Lyon.

Registration Form: <http://mi.aipg.org/Golf/2018%20Golf%20Announcement.pdf> or on-line:

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

May 16 - 17th, 2018: Institute on Lake Superior Geology 2018 Annual Meeting, Iron Mountain, Michigan
<http://www.lakesuperiorgeology.org/IronMt2018/index.html>

June 12 -13th, 2018: Michigan Environmental Compliance Conference,
http://www.michigan.gov/deq/0,4561,7-135-3308_3333-451152--,00.html

June 12 -13th, 2018: Annual Michigan Section AIPG Technical Workshop to be held in Roscommon

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

MDEQ Calendar of Training and Workshops

http://www.michigan.gov/deq/0,4561,7-135-3308_3333---,00.html



MICHIGAN BASIN GEOLOGICAL SOCIETY OFFICERS

2017-2018

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WEBMASTER: JOHN ESCH, eschj@michigan.gov

MBGS PUBLICATIONS

<http://www.mbgs.org/publications.html>



Prices include postage, handling and any applicable sales tax.
Orders for publications should be prepaid in U.S. Funds and addressed to:

MBGS — Publications
P.O. Box 14044
Lansing, MI 48901-4044

Historical CD #1: Nine out-of-print publications from 1949 through 1965 and 1998, 2000, \$15

- The Stratigraphy of Manitoulin Island, Ontario, Canada, June 19-20, 1954
- The Devonian and Silurian Rocks of Parts of Ontario, Canada and Western New York, June 22-23, 1951
- The Traverse Group of the Northern Part of the Southern Peninsula of Michigan, June 16-17, 1949
- The Devonian Strata of the London-Sarnia Area, Southwestern Ontario, Compiled by Erwin C. Stumm, Lewis B. Kellum and Jean Davies Wright, June 9-10, 1956
- The Ordovician Rocks of the Escanaba-Stonington Area, Led by R. C. Hussey , June 2-3, 1950
- The Niagara Escarpment of Peninsular Ontario, Canada, June 18-19, 1955
- Lower Paleozoic and Pleistocene Stratigraphy Across Central Wisconsin, Compiled by C. E. Prouty, Led by L. M. Cline, J. L. Hough and R. F. Black, 1960
- Classic Silurian Reefs of the Chicago Area, by Donald G. Mikulic and Joanne Kluessendorf , June 27, 1998
- Geology of Central Ontario, Canada, 1965

Historical CD #2: Four out-of-print publications from 1947, 1959, 1983 and 1991, 2001, \$15

- Copper Country Field Trip, Michigan, June 20-22, 1947
- Geology of Mackinac Island and Lower and Middle Devonian, South of the Straits of Mackinac, June 12-14, 1959
- Tectonics, Structure and Karst in Northern Lower Michigan, August 1983
- Geology of the Pictured Rocks, Upper Peninsula, Michigan, July 11-13, 1991

Historical CD #3: Six out-of-print publications from 1948, 1952, 1990 - 1995, 2001, \$15

- Pleistocene and Early Paleozoic of the Eastern Part of the Northern Peninsula of Michigan, June 18-21, 1948
- Stratigraphy and Structure of the Devonian Rocks in Southeastern MI and Northwestern OH, June 20-21, 1952
- Lower Ordovician and Upper Cambrian of Wisconsin , May 10-12, 1990
- Guidebook to the Precambrian Geology and Metallogeny of the Central Upper Peninsula of Michigan September 12-13, 1991

Historical CD #4: Six out-of-print publications from 1957, 1958, 1961, 1967, 1968 and 1970, 2004, \$15

- Silurian Rocks of the Northern Peninsula of Michigan , 1957
- Cambrian Geology of Parts of Dickinson and Iron Counties, Michigan, June 1958
- Geologic Features of Parts of Houghton, Keweenaw, Baraga and Ontonagon Counties, Michigan, May 19-21, 1961
- Correlation Problems of the Cambrian and Ordovician Outcrops Areas, Northern Peninsula of Michigan 1967
- The Geology of Manitoulin Island, June 1968
- Devonian Strata of Alpena and Presque Isle Counties, Michigan 1970

Historical CD #5: Five out-of-print publications from 1971, 1989, 2001, and Oil & Gas Fields Vol. 1 & 2, 1969 & 1992, 2006, \$50

- Oil & Gas Fields Symposium, Volume 1, April 1969, 200 pp., maps, illus., second printing with updates
- Oil & Gas Fields Manual of the Michigan Basin, Volume 2, 1992, 520 pp., maps, illus.
- Glacial Geology of Southwestern Michigan, 1989, 53 pp. by A. Kehew, L. J. Schmaltz, and W. T. Straw
- Geology of the Lake Erie Islands and Adjacent Shores, 1971, 65pp., maps, illus. by Jane L. Forsyth
- Glacial Geology of Southwestern Michigan, Landforms of the Lake Michigan Lobe, Southwestern Michigan, 2001, AAPG Eastern Section Meeting Field Trip, 32 pp., maps, illus. by A Kehew and A. Kozlowski

Historical CD #6: Six out-of-print

publications from 1946, 1953, 1963, 1966, 1978 & 1987 plus the Richfield Challenge, 1952 & Tom Knapp's MS Thesis, 2007 \$15.

- Guidebook for Ordovician Stratigraphy of the Cincinnati, Ohio and Richmond, Indiana Areas, June 12, 13, 1953 by W. H. Shideler and B. T. Sandefur
- Guidebook for Ontario Geological Excursion to Kettle Point – Owen Sound- Waubesa, June 21, 22, 23 1946 by W. A. Roliff, C.S. Evans and J.F. Caley
- Guidebook for the Stratigraphy of the Silurian Rocks in Western Ohio, May 31-June 2, 1963 by C. H. Summerson, Jane L. Forsyth, Karl V. Hoover and J. R. Ulteig
- Guidebook for Cambrian Stratigraphy in Western Wisconsin, May 21, 22, 1966 by Merideth E. Ostrom
- Geology of the Manitoulin Area, Special Papers #3, September 29, 30 and October 1, 1978 by J. T. Sanford
- and R. E. Mosher
- Middle Devonian Cratonic Carbonates and Shales in Southwestern Ontario, November 14, 1987 by Bruce Wilkinson
- The Richfield Challenge, A Review of the Richfield Developments in Michigan, 1952 by Gordon H. Hautan
- A Theory of Rogers City and Dundee Relationships in Central Michigan, Masters Thesis, 1947 by Tom Knapp

Historical CD #7: Field Guidebooks from 1962, 1969, 1977, 1980, 1985 & 1988, \$15

- Silurian Rocks of the Southern Lake Michigan Area, 1962, James H. Fisher, Chairman, MBGS Annual Field Conference
- Studies of the Precambrian of the Michigan Basin, by Harold B. Stonehouse, 1969
- The Geology of the Marquette District: a Field Guide By F. W. Cambray, 1977
- Ordovician and Silurian Geology of the N. Peninsula of Michigan, 1980, R.B. Votaw, 40 pp., illus., maps
- Special Paper #4: Ordovician and Silurian Rocks of the Michigan Basin and its Margins, 1985 K.R. Cercone and J.M. Budai (eds.), 96 pp., illus.
- Upper Keweenaw Rift-Fill Sequence, Mid-Continent Rift System, Michigan, 1988, P.A. Daniels and R.D. Elmore, M.S. Wollensak, ed., 150 pp., illus., maps

OTHER SPECIAL OFFERS

- **Historical CD Set - # 1 – 7 (detailed above) for a special purchase price of \$95**
- **NE Lower Peninsula Geological Field Conf.**, 2004, T. Black, M. Wollensak, On CD \$10
- **Stratigraphic Lexicon for Michigan**, 2001, prepared by MBGS and published by DEQ, \$4
- **Robert E. Mosher Geological Studies** A lifetime of geological research on Silurian Rocks with John T. Sanford. The disks are organized chronologically and include field work in North America and Europe. 2007, 2 CDs \$35.

MICHIGAN BASIN GEOLOGICAL SOCIETY SCHOLARSHIP APPLICATION 2018

Name (last, first, middle initial)		Home Telephone		Office Telephone	
		()		()	
Present Address with Zip Code:					
Present Institution:		Department:	Degree Sought:	Current GPA:	Projected Grad Date:
Previous Institution:		Department:	Degree Sought:	Current GPA:	Grad Date:
Awards & Honors (award, institution making award, & year):					
Professional Experience (job, employer, location, dates of employment):					
Title of Proposed Investigation:					
Source of Research Project (individual or group, student's idea, part of professor's ongoing research, outgrowth of class work, critical review of literature, etc.):					
Project Goal (one sentence statement of central goal of research project):					
Percent of Project Completed:					
<i>THIS SECTION MUST BE COMPLETED IN FULL FOR APPLICATION ACCEPTANCE</i>					
Endorsement: Assessment of application and project (required) by <u>faculty supervisor</u> : Assessment of applicant's capability to fulfill the objectives of the stated research: Compared to other students, how does this student rank (top 10%, 20%, etc.)? Are there any other factors that we should consider (such as student's financial situation):					
Department Endorsement: Dept. Chair or Grad Advisor's Signature:				DEPARTMENT STAMP	
Please type or print name: _____ Date: _____					
Disciplinary Emphasis (e.g. petrophysics, paleontology, stratigraphy, structural, etc.)					
Procedures emphasized in your work (e.g., field work, seismic interpretation, etc.):					

Summary of Investigation: (250 words or less; must all fit in this box; please print neatly or type directly into this section in the current format). Include purpose, regional context, methods, scientific importance and potential impact on energy resource exploration or utilization. The Summary is by necessity brief and must focus on information relevant to your scholarship application:

Applicant's Signature _____

Date _____

Applications due by April 6, 2018 to:

John A. Yellich, MBGS Secretary

john.a.yellich@wmich.edu

Subject Line: MBGS Scholarship 2018

State of Michigan Earth Day Event – April 19th, 2018



The Department of Environmental Quality (DEQ), the Department of Natural Resources (DNR), and the Michigan Department of Agriculture and Rural Development (MDARD) will come together to celebrate Earth Day on Thursday, April 19, 2018 at Constitution Hall in Lansing, Michigan. This year's participants will include school groups; families and friends of Earth Day poster contest winners; partnering organizations; and children of DEQ, DNR, MDARD, and Department of Technology, Management and Budget (DTMB) staff in celebration of Bring Your Child to Work Day.

Last year, 16 school groups were invited to celebrate at Constitution Hall. Over 2,100 adults and students attended and participated in a memorable celebration. Students were able to learn from and engage in over 50 interactive exhibits. Our Earth Day event has become a significant education initiative and has a lasting impact on a generation that will soon be responsible for decisions regarding our environmental and natural resources.

Each year students in grades kindergarten through 5th are encouraged to submit a creative poster that reflects the principles of Earth Day. Last year we received over 3,200 posters. First and second place winners from each grade will be awarded at the Earth Day Celebration. If you are a K- 5 teacher and would like your students to participate in the annual poster contest, click on link below to find out how.

- [2018 Poster Contest Entry](#)
- [2018 School Group Participation Brochure](#)
- [2018 Exhibitor Invitation](#)
- [2018 Earth Day Exhibitor Form](#)
- [2018 Earth Day STEM Exhibitor Form](#)

[Check here to see other 2018 Earth Day activities happening around the state!](#)

If you would like us to list your Earth Day Event or have additional questions, please contact Tom Occhipinti, Environmental Education Coordinator at OcchipintiT@michigan.gov.

OTHER SPECIAL ANNOUNCEMENTS

SUMMER EMPLOYMENT OPPORTUNITY

Sleeping Bear Dunes National Lakeshore is recruiting one Teacher-Ranger-Teacher (TRT) to spend the summer in the park learning about the resource and developing education programs. The TRT will create pre-visit and on-site lessons and program materials. They will also create a post-visit, project-based activity for teachers and students to complete in their classrooms that will enable them to share what they have learned about citizens, the national parks, or the DMP.

The National Lakeshore is in need of hands-on lessons and activities that are tied to Next Generation Science Standards for middle and especially high school students. They are seeking a TRT that has experience working with these grade levels teaching science to help them develop a program that will allow students to do citizen science in their community and participate in a national study. The TRT may also help develop a distance learning program, work with a variety of park experts, and gain experience helping with other park programs or special events.

This year's TRT will be assisting in the development of lesson plans and program materials necessary to facilitate the National Lakeshore's participation in the Dragonfly Mercury Project (DMP); a nation-wide program where citizen scientists use dragonfly larvae to help examine indicators of mercury contamination in the environment. Learn more about the program at: https://www.nature.nps.gov/air/Studies/air_toxics/dragonfly/index.cfm.

Friends of Sleeping Bear Dunes is helping to fund this program by matching a grant from the NPS Great Lakes Research and Education Center. Applications received by April 30, 2018 will receive first consideration. For more information, please visit the National Lakeshore's website at: <http://www.nps.gov/slbe/forteachers/development/teacher-ranger-teachers.htm>. Email slbe_education@nps.gov to receive an application.

JUST FOR FUN

Site Name	Google Earth/KML Files for Tectonics
Site URL	https://earthquake.usgs.gov/learn/kml.php
Site Author	USGS
Description	"Each poster in the Earthquake Summary Poster series contains multiple panels showing the epicentral area, plate tectonic environment, earthquake history, and generalized seismic hazard of the region."
Site Name	Periodic Table Poster
Site URL	https://ptable.com/#Writeup/Wikipedia
Description	"Interactive periodic table with dynamic layouts showing names, electrons, oxidation, trend visualization, orbitals, isotopes, and compound search."

AIPG Michigan Section Announces the



TH ANNUAL

**Environmental Risk Management Workshop
Emerging Contaminants & Pathways:
A New Paradigm**



Registration Information

Registration is now open for the 8th Annual AIPG Michigan Workshop on June 12 and 13, 2018, at the Ralph A. MacMullan Conference Center on Higgins Lake in Roscommon, Michigan. Early bird discounts are available. Click on the "Sign up here!" below.

The 8th workshop in the series of annual training events hosted by the AIPG Michigan Section focuses on providing quality technical information and case studies. These environmental workshops bring together a broad base of topic expertise from consulting, regulatory, academic, and owner perspectives.

The workshop will provide the same thought provoking, high quality presentations and discussions as have come to be expected of the Michigan Section's annual workshop. As professionals working in the environmental industry, we make decisions regarding potential and real exposures daily using tools developed from the latest advances in science and technology, statutory requirements, and professional experience.

This year we are thrilled to have our National Executive Director,

Aaron Johnson, Ph.D., as our keynote speaker!

Additionally, this year's topic, *Emerging Contaminants and Pathways: A New Paradigm* will bring information from experts in the field on everything from the global perspective to the new Michigan-specific program for managing emerging contaminants like Per- and Poly-Fluoroalkyl Substances (PFAS) and 1,4-Dioxane and pathways like vapor intrusion. Case studies from sites here in Michigan and outside are the main focus of the workshop allowing for information sharing amongst environmental practitioners. Look for the program agenda in upcoming announcements and on our web page at www.mi.aipg.org.

We are also featuring field demonstrations and would like to encourage anyone who has a service or equipment that would be great for a demo to please contact Sara Pearson or Rick Dunkin at the email addresses below.

[Sign up here!](#)



See you at the workshop!

Contact Sara Pearson (pearsons@michigan.gov) or Rick Dunkin (ecorock2009@gmail.com)

AIPG Michigan Section Announces the



TH ANNUAL

**Environmental Risk Management Workshop
Emerging Contaminants & Pathways:
A New Paradigm**



Sponsor Invitation

The AIPG Michigan Section is offering sponsorship opportunities for the 8th Annual AIPG Michigan Workshop to be held June 12 and 13, 2018, at the Ralph A. MacMullen Conference Center on Higgins Lake in Roscommon, Michigan.

The 8th workshop in the series of annual training events hosted by the AIPG Michigan Section focuses on providing quality technical information and case studies. These environmental workshops bring together a board base of topic expertise from consulting, regulatory, academic, and owner perspectives.

This unique workshop forum creates excellent opportunities for

- *Networking*
- *Knowledge Transfer*
- *Collaborative Problem Solving*
- *Innovative Product Introduction*
- *Field Demonstrations*



Leadership and Break Sponsors are available at various levels!

This year the AIPG Michigan Section is featuring exhibitors during one of the presentation sessions giving exhibitors at the Michigan and Superior Glacial Lobe levels an opportunity to speak about their services for 2-3 minutes.

The workshop will provide the same thought provoking, high quality presentations and discussions as have come to be expected of the Michigan Section's annual workshop. As professionals working in the environmental industry, we make decisions regarding potential and real exposures daily using tools developed from the latest advances in science and technology, statutory requirements, and professional experience.

Sponsorship Questions: Contact Sara Pearson (pearsons@michigan.gov).

Be sure to join us in June!

Field Demonstration Openings Available

Contact Sara Pearson (pearsons@michigan.gov) or Rick Dunkin (ecorock2009@gmail.com)

MICHIGAN BASIN GEOLOGICAL SOCIETY GEOLOGIST'S RETREAT APRIL 13-15, 2018

THE RIDDLE OF THE GLACIERS An Examination of the Yankee Springs Glacial History

- DATE:** Friday, Saturday and Sunday – April 13th, 14th & 15th, 2018
- FEE:** \$40 for MBGS Members (adult or student); \$50 for non-MBGS members.
- LOCATION:** Yankee Springs Recreation Area, Middleville, MI
- LODGING:** We have reserved 3 rustic cabins capable of bunking 18 members. You will need to bring your sleeping bag and pillow for this social event. Fee includes: a bunk for 2 nights, 2 breakfasts, a lunch and dinner.
- LEADERS:** Dr. Robb Gillespie, Assistant Professor of Geosciences, Department of Geosciences, Western Michigan University, Kalamazoo Michigan
- REGISTRATION:** Please email Mark Wollensak at wollensak@voyager.net to get your name on the attendees list. *We have room for only 18 participants. Separate cabins for each gender will be provided.* Complete and submit by April 2 the registration form below with fee to guarantee your reservation once you have your name on the attendees list.

General outline of this retreat:

This is a social event to allow members to assemble in a relaxed environment to share knowledge and mingle. In addition to spending the majority of Saturday viewing, hiking and discussing the glacial landforms left by the glacial retreat, time in the evenings can be spent playing euchre, other card games, or relaxing and sharing tales.

A little about our trip leader:

Dr. Robb Gillespie is professor of sedimentology, petroleum geology and geomorphology in the Department of Geosciences at Western Michigan University. His research through the department and the Michigan Geological Repository for Research and Education focuses on sedimentation, petroleum geology and glacial landscapes of the southeast Georgian Bay area of Ontario, Canada.

Name: _____

Phone Number: _____

Address, City, State, Zip: _____

Email Address: _____

Comments: _____

Notes: Please let us know if you have any dietary requirements/restrictions or food allergies.

If you are not a member, you will be required to complete the MBGS membership application, which can be found on our website: <http://www.mbgs.org>.

Please make check payable to "Michigan Basin Geological Society" in US\$.

Mail Completed Form and Payment to:

MICHIGAN BASIN GEOLOGICAL SOCIETY
ATTN: APRIL RETREAT @ YANKEE SPRINGS
P.O. Box 14044
Lansing, MI 48901, USA

MICHIGAN BASIN GEOLOGICAL SOCIETY GEOLOGIST'S RETREAT APRIL 13-15, 2018

THE RIDDLE OF THE GLACIERS An Examination of the Yankee Springs Glacial History

WHAT TO BRING:

1. Outdoor shoes/boots with ankle support are suggested. Plan on hiking trails to view and discuss glacial features. Off trail hiking may occur.
2. Rain jacket, weather appropriate clothing.
1. Camera, note-book, pencil.
2. Evening snacks to share.
3. Bring your favorite beverages.

GEAR FOR OVERNIGHT STAY:

3. Sleeping bag, pillow, sleeping wear. We will have 3 cabins to use.
4. Clothing for indoor and outdoor activities, personal supplies.

SCHEDULE OF EVENTS:

DAY 1 – Friday, April 13th, 2018:

6:00pm-12:00am Meet at Cabins to check in and be assigned a bunk. Gather for drinks, snacks, cards and relaxing!

DAY 2 – Saturday, April 14th, 2018:

8:00am Rise and shine.

8:30am – 9:30 am Breakfast.

9:30 am – 12:30pm Presentation by Dr. Robb Gillespie on glaciation at Yankee Springs Recreation Area. May have indoor presentation and hiking. May ask for assistance in carpooling around park as needed.

12:30pm - 1:30pm Lunch

1:30pm – 5:00pm Hiking and discussion lead by Dr. Robb Gillespie on glaciation at Yankee Springs Recreation Area. May ask for participants to assist in carpooling around park as needed.

5:00pm - 6:00pm Appetizers and aperitifs

6:00pm - 7:30pm Dinner

7:30pm – 12:00am Social time for card games, drinks, relaxing, campfire, etc.

DAY 3 – Sunday, April 15th, 2018:

8:00am Rise and shine.

8:30am – 9:30 am Breakfast

9:30am - 12:00pm Cleanup cabins and clear out.

12:00pm Trip ends - *Return whence you came!*

MICHIGAN BASIN GEOLOGICAL SOCIETY

FIELD EXCURSION SPRING 2020

A GEOLOGICAL EXCURSION BY RAFT ON THE COLORADO RIVER THROUGH THE *GRAND CANYON* - LEE'S FERRY TO WHITMORE WASH PAGE, ARIZONA

- DATE:** May 2020, actual dates and length of trip (9-10 days total) to be determined in late 2018. Anticipate starting the trip at the start of the 3rd week in May.
- FEE:** Estimated at \$3,200 each (rafting trip only) for MBGS Members. Each participant will be responsible for round trip air travel (to Page, AZ and return from Las Vegas, NV), lodging, possibly surface travel and food outside of rafting trip.
- LEADERS:** ***Dr. Katherine McCarville, Pd.D.***, Professor of Geosciences, Upper Iowa University, Fayette, IA
- REGISTRATION:** A preliminary signup list is now being assembled for those interested in this trip. Email Mark Wollensak at wollensak@voyager.net to get your name on the prelim list. A non-refundable (but transferrable) down payment of \$500 will be required at the time our river expedition outfitter sets the firm dates for the trip (late 2018). There is a maximum of 30 participants.
- OUTFITTER:** **Hatch River Expeditions, Flagstaff, AZ**
www.hatchriverexpeditions.com/grand-canyon-motorized-rafting-expeditions
A 7 day Grand Canyon rafting trip through Hatch includes: 188 miles of rafting from Lee's Ferry to Whitmore Wash, pre-trip stay at Cliff Dwellers Lodge included, Helicopter ride & return flight to Las Vegas or Marble Canyon included. Meals, beverages, camping gear and dry bags are provided by Hatch while on the river.
- TRIP BACKGROUND:** The Michigan Basin Geological Society (MBGS) is returning to raft the Colorado River through the Grand Canyon in May of 2020. This is a repeat of the 2005 trip taken except this trip will be led by a highly experienced Dr. Kata McCarville, Upper Iowa University. Many repeat stops are anticipated to be visited such as Lava Canyon, Redwall Cavern, Nankoweap Grainery and Havasu Canyon. New stops are also anticipated. The Grand Canyon is the first on the list of the Seven Natural Wonders of the World.
- GEOLOGICAL BACKGROUND:** The geology of the Grand Canyon area includes one of the most complete and studied sequences of rock on Earth. The nearly 40 major sedimentary rock layers exposed in the Grand Canyon and in the Grand Canyon National Park area range in age from about 200 million to nearly 2 billion years old. Most were deposited in warm, shallow seas and near ancient, long-gone sea shores in western North America. Both marine and terrestrial sediments are represented, including fossilized sand dunes from an extinct desert. There are at least 14 known unconformities in the geologic record found in the Grand Canyon. *Wikipedia*

MICHIGAN BASIN GEOLOGICAL SOCIETY

FIELD EXCURSION SPRING 2020

A GEOLOGICAL EXCURSION BY RAFT ON THE COLORADO RIVER THROUGH THE *GRAND CANYON* - LEE'S FERRY TO WHITMORE WASH PAGE, ARIZONA

PHYSICAL REQUIREMENTS: We anticipate this trip will be challenging for some to adjust to the environmental conditions, including heat, cold, elevation, weather, water and sand. If you have factors that could make a trip more difficult including age, weight, lack of conditioning, and heart or other diseases, consider talking to a doctor before committing.

Here are some minimum requirements you must be able to meet to safely enjoy your journey:

- Able to fit into a Type 5 Life Jacket (max chest size 58");
- Ability to hold onto the raft while going through whitewater. Ropes are provided throughout the raft for hand holds;
- Capable of climbing onto and off of the raft. There will be about a 2 foot step up/down from the raft to the beaches. Please note that some surfaces may be wet and slippery;
- Comfortable walking on uneven, rocky terrain. Trails in Grand Canyon are not regularly maintained. Each day will have up to two hikes. Some hikes will start upstream from where we get picked up at a later time downstream. In these instances, the hike must be completed within the time allotted and returning to the starting point is not possible. Some hikes may be through a stream against moving water. One hike anticipated is approximately 3 miles on rough terrain and within narrow rock canyons. Also sand beaches are the norm for camp sites so make sure you are comfortable walking across the sand inclines;
- Able to carry your own personal gear to and from camp. The maximum weight for personal gear is 25 pounds.

Recommended Pre-Trip Conditioning Activities:

- Find and hike local trails that have elevation gain and loss;
- Use the incline feature on machines at your local gym (or take the stairs wherever you go);
- Walk and hike on uneven terrain to prepare for rocky trails;
- Purchase hiking shoes or cross training shoes and hiking sandals and break in ahead of time to avoid blisters; and
- Get in the habit of drinking water throughout the day – it's good for you every day, but mandatory on the river!

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Biography: Dr. McCarville (Kata) has roots in the midwest but grew up in California. She studied geology at UCLA as an undergraduate, and worked as a uranium miner in Wyoming after graduation. She took a masters degree in geology Colorado School of Mines, working on uranium deposits in the Red Desert basin of Wyoming, and then worked for a number of years in computing and networking at universities and for engineering consulting firms. As a Bush Foundation Leadership Fellow, she did her doctoral work in avian paleontology of Fossil Lake, Oregon, at the South Dakota School of Mines. Her work resulted in an innovative interpretation for the locality.

Kata got started with Grand Canyon geology while working with John Warme on a number of projects. She has led or co-led numerous Grand Canyon geology rafting trips (including the 2005 MBGS trip), and organized and led many other geology field trips. Born at the confluence of the Missouri and Mississippi Rivers, she is a river rat. She's spent time on and along the Colorado, Green, Platte, Snake, Mississippi, and many of Iowa's rivers.

Kata is a member of the faculty at Upper Iowa University in Fayette, Iowa, where she coordinates the Environmental Science degree program. She teaches a wide variety of courses in geosciences and geography, and chairs the Department of STEM. Her interests span the earth and environmental sciences and often cross disciplinary boundaries. Her current research centers on the role of disturbance in prairie ecosystems, and the origins of the Iowan Erosion Surface. She enjoys mentoring students, and has supervised student projects in trumpeter swan restoration, wildland fire education, fish species in Grand Canyon, squirrel nest-tree selection preference, assessment of a local shooting range for lead contamination, and GIS-based studies of the distribution of algific talus slopes that serve as refugia for Pleistocene species, among others.

An advocate for diversity in STEM, Kata serves as UIU Campus Director for the Louis Stokes Alliance for Minority Participation in STEM disciplines, and as Co-Principal Investigator on an NSF-funded project called STEM-Pros: Growing More STEM Professionals in the Heartland.

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PROPOSED ITINERARY:

- Day 1: Travel by plane to Page, Arizona (or arrive previous day). Hatch will pickup participants at the Page, AZ airport (or hotel) for transportation to Cliff Dwellers Lodge. We anticipate sightseeing in afternoon which may include Glen Canyon Dam, Navajo Bridge, Marble Canyon, Horseshoe Bend and the Navajo Sandstone. A group dinner in evening at the Cliff Dwellers Lodge. A speaker is being arranged following the dinner.
- Day 2: Depart Lodge to Lee's Ferry. Load raft and begin rafting trip on Colorado River in the Grand Canyon. Day 1 on River.
- Day 3-8: Days 2 -7 on River. Stops and/or hikes may include Redwall Cavern, Nankoweap Grainery, Carbon Creek/Lava Canyon, Phantom Ranch, Elves Chasm, Havasu Canyon and Lava Falls. Camping will be on sand bars along the river suitable to accommodate 2 rafts of participants. Anticipate one party night "Margarita Night" on the river.
- Day 8: Day 7 on River. Arrive at Whitmore Wash for helicopter ride out of canyon to Whitmore Landing. Fly out of Whitmore Landing International Airport for Las Vegas or Marble Canyon. Lodge in Las Vegas or Marble Canyon/Page.
- Day 9: Depart for Home.