

On the Rocks



A Newsletter of the Michigan Basin Geological Society

2004-2005 Number 1

www.mbgs.org

September 2004

EVENTS

September 8, 2004: MBGS Meeting “Grand Canyon Geology and River Running” speaker is Dr. John Warme, Colorado School of Mines. This meeting is highly recommended for those who are attending or considering attending the MBGS Grand Canyon Field Trip.

September 23, 2004: PTTC Petroleum Systems of the Michigan Basin— A look at Remaining and Undiscovered Oil and Gas Resources, Crowne Plaza, Grand Rapids, MI. See more information below.

September 26-29, 2004: Society of Petroleum Engineers annual meeting Houston, Texas. More information at <http://www.spe.org/atce/2004/index.html>

October 2-3, 2004: Tri-State Geological Field Conference, “A Geologic Tour Around Lake Winnebago and the Fox River Valley”, Wisconsin. See more information below. See more information below and at <http://www.fox.uwc.edu/wesm/events.html>

October 3-6, 2004: 33rd Annual AAPG Eastern Section Meeting Ramada Plaza Hotel, Columbus, Ohio. The theme of this year’s meeting is “Still Economic after all these Years.” More information at: <http://www.ohiodnr.com/geosurvey/aapg04.htm>

May 5-16, 2005: MBGS Grand Canyon Field Trip.

2004-2005 MBGS Officers

The Executive Committee meeting minutes are available on the website.

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University Talks and Seminars Websites

Western Michigan University:
www.wmich.edu/geology/SeminarGeos.html

Michigan State University:
www.glg.msu.edu/news/lectures.html

University of Michigan, Turner Lecture Series:
www.geo.lsa.umich.edu/announce/turner02b.html

Michigan AIPG Section website: www.aipg-mi.org.

MEETING CANCELLATION POLICY

Monthly meetings will be automatically cancelled whenever the National Weather Service issues a "Storm Warning" for the Lansing area. If driving conditions are poor but a "Warning" has not been issued please contact any member of the Executive Committee for the status of the meeting.

MICHIGAN BASIN GEOLOGICAL SOCIETY PUBLICATIONS

Historical CD #1: Nine out-of-print publications from 1949 through 1965 and 1998, Devonian to Silurian Rock Fieldtrips to MI, WI, IL and Ontario, 2000, \$15

Historical CD #2: Four out-of-print publications from 1947, 1959, 1983 and 1991, Northern Devonian and UP Fieldtrips in MI, 2001, \$10

Historical CD #3: Six out-of-print publications from 1947, 1959, 1983 and 1991, Northern Devonian and UP Fieldtrips in MI, 2001, \$12

Special Price - Historical CD #1, #2 & #3, \$30

Stratigraphic Lexicon for Michigan, 2001, prepared by MBGS and published by DEQ, 56 pp., chart, \$2.65 picked up or \$4 mailed, Can be ordered from MBGS or Geological Survey Div. of the DEQ

Price Includes postage, handling and any applicable sales tax. MBGS Members receive a 10% discount on MBGS publications. Orders for publications should be prepaid in U.S. Funds and addressed to:
MBGS - Publications
c/o Dept. of Geological Sciences
206 Natural Sciences Building
Michigan State University
East Lansing, Michigan 48824-1115

MBGS Mug and Jacket Sale

The Michigan Basin Geological Society is offering mugs and jackets with the society logo for sale. The mugs are \$5.00 each. The jackets are \$60.00 each plus postage. Please contact Dan McGuire at: Phone (517) 772-5219, Fax (517) 772-7021, or danmcguire@sensible-net.com. Remember to include the correct size of the jacket and the quantity of each item. Checks should be made out to the MBGS.

DUES TIME AGAIN

The advent of a new speaker's season at MBGS means its time to renew your memberships. Our Treasurer Tom Hoane encourages you to renew your memberships. Timely renewal helps your officers plan for the upcoming year and is the best way to ensure there will be no interruptions in receiving your On the Rocks newsletter.

Michigan Basin Geological Society Dues Notice

Please fill out this form when paying your dues for 2004-2005. Dues are \$25.00 for active member and \$10.00 for students.

Name _____

Address _____

Phone _____

E-Mail _____

Amount enclosed _____

Send Newsletter by e-mail _____ or Mail _____ @ address above

Make check payable to: MBGS

Send to: Tom Hoane
1748 Danby Lane SE
Grand Rapids, MI 49506

New Meeting Location

Following last year's closing of the Lansing Mountain Jacks, we have searched for another site, which is convenient and affordable to hold MBGS meetings. The next few MBGS sponsored meetings will be held at **Coyote Creek** (formerly The Pour House), 6951 Lansing Road, Diamondale 48821. Take Exit 98 south off 1-96. Coyote Creek is on the west side of Lansing road, south of I-96 (in front of the State Secondary Complex).

Map available at :

http://maps.infospace.com/_1_BBCT160222TT7E_info.four/kevmap?op=MoveMap&otmpl=%2Fkevmap%2Fmap-out.htm&lat=42.6778&long=-84.6515&lat_p=42.6778&long_p=-84.6515&QA=6951+Lansing+&QC=Lansing&QS=mi&QZ=48821&QO=US&width_o=360&height_o=270&detail_o=1&scale_o=1&matchpass=ZIP9&width=478&height=359&detail=1&scale=2

MBGS Meeting

September 8, 2004 (WEDNESDAY)

**New Location: Coyote Creek
6951 Lansing Rd, Dimondale, MI.**

Schedule: 5:30 to 6:15 PM Social Hour
6:15 PM Dinner
Presentation after dinner

Cost \$25.00/member \$15.00 Student (includes dinner)

Topic: "Grand Canyon Geology and River Running"

By
Dr. John Warme
Colorado School of Mines

MBGS Dinner Meeting Reservation

Name _____

Number attending _____ Society _____

Enclosed Registration Fee _____

Please make checks payable to **MBGS** and return to Pat Poli by September 3, 2004. Members are welcome to attend the presentation after dinner for no charge. Please contact Pat Poli to ensure adequate seating. Send reservations to:

Pat Poli
Engineering Section
Engineering and Service Quality Division
6545 Mercantile Way
Lansing, MI 48909
Ph: Bus 517-241-6141, Fax 517-241-6071
E-mail: pmpoli@michigan.gov

“Grand Canyon Geology and River Running”

The subject at our September meeting will be Dr. John Warme’s “Grand Canyon Geology and River Running.” The talk will serve as an introduction to the geology of the Grand Canyon and as a prelude for what the participants of the Grand Canyon Field Trip can expect to see. This trip down the Colorado River will provide some of the same glimpses of wilderness and geology as experienced by John Wesley Powell in his epic voyages in 1869 and 1871.

Professor Warme will be our river and geology guide during this talk and on the Grand Canyon Field Trip. He has led many rafting trips into the canyon and has been the guide for numerous AAPG trips. The following is a brief list of John’s background.

Education:

- Professor, BA Augustana College
- PhD University of California/Los Angeles
- Fulbright Scholar, University of Edinburgh

Research Projects:

- Interpretation of depositional environments
- Applied stratigraphy
- Basin Analysis
- Integrated exploration
- Paleocology

We are fortunate to be guided by the person who is considered to be the geological guru of the Grand Canyon.

Grand Canyon Field Trip 2005

There are two boats. Presently the first boat is filled and there are openings in the second boat. Attendance on this trip is on a first-come-first-served basis so those determined to attend should make reservations with Mark Nida ASAP. **Deposits of \$100 are required at the time you make your reservation.**

The cost will be approximately \$2200 plus transportation cost to Las Vegas. If you are interested in joining MBGS members on this trip, email Mark Nida at mcnida@michigan.gov or Mark Wollensak at mark@mbgs.org.

New Publications

Mineralogy of Michigan, update and revised by George W. Robinson.

This is a major revision of this important reference. Now in an 8.5” by 11” format with over one hundred full color illustrations of minerals found in Michigan. To order, contact Ms. Sharon Carter, Office of Geological Survey, DEQ, 525 W. Allegan Lansing, MI 48909-7756. Or call 517-241-1520 or email at carters1@michigan.gov

Price \$ 45.00 (plus shipping)

Michigan Fossils POSTER & Flash Cards

This is your opportunity to obtain twenty-four of the usual fossil suspects from Precambrian to Pleistocene, vertebrates, invertebrates and plants, statewide.

Michigan Fossils poster - folded to 8.5” by 11” - \$1.50

Michigan Fossils poster - rolled / “flat” 17” by 22” - \$3.00

Flash Cards - set of 36, 3.5” by 2.5” cards - \$2.00

includes 9 sedimentary rocks as well as fossils from the poster

To order, contact Ms. Sharon Carter, Office of Geological Survey, DEQ, 525 W. Allegan Lansing, MI 48909-7756. Or call 517-241-1520 or email at carters1@michigan.gov

Digital Images of **Geology (DIG)** Contest

Information and details are on the web @ www.michigan.gov/deggeologyinmichigan
- or -

Call Steven E. Wilson at 241-1542 or email at - wilsonse@michigan.gov
MI DEQ, GLMD, 525 W. Allegan, Lansing, MI 48913



PETROLEUM TECHNOLOGY TRANSFER COUNCIL

Michigan PTTC Center

Michigan Basin Core Research Laboratory

Western Michigan University

and the



MICHIGAN OIL AND GAS ASSOCIATION

Jointly present a one-day workshop

Petroleum Systems of the Michigan Basin—

A look at Remaining and Undiscovered Oil and Gas Resources

At the Crowne Plaza, Grand Rapids, MI on September 23, 2004 from 8:30am to 4pm

- Come learn about the work of geoscientists from the USGS who have been studying samples and data from the Michigan Basin to estimate undiscovered oil and gas resources
- Hear a State geologist describe how historical exploration can forecast potential opportunities that may remain
- See how structure and isopach maps for both potential petroleum source rocks and known producing horizons can be used to visualize their prospectivity
- See the source rocks in cores and cuttings
- Learn from geoscientists at the University of Houston about how their work on imaging seismic features in Trenton-Black River rocks in other areas might have implications for the Michigan Basin
- Hear the thoughts of a panel of Michigan independents who worked with the USGS

The information and concepts presented at this workshop may well shape Michigan's oil and gas production in the coming decade.

Come share the excitement!

Agenda and Program:

8:30-9:00--Registration, welcome and refreshments

9:00-9:40--Dr. Christopher S. Swezey, Research Geologist, U. S. Geological Survey, will introduce the work of the U. S. Geological Survey (USGS) on an oil and gas assessment of the Michigan Basin, and how the USGS uses the concept of "petroleum systems" to estimate undiscovered oil and gas resources. He will review the petroleum systems of the Michigan Basin, and focus on several reservoir intervals with remaining potential for undiscovered hydrocarbons. Chris obtained a Ph.D. in geology from the University of Texas at Austin in 1997, and he has worked for British Petroleum, BP Amoco, Phillips Petroleum, and the Texas Bureau of Economic Geology. About 4 years

ago, he joined the USGS Eastern Energy Resources Team, where he has worked on oil and gas assessments of the Appalachian Basin and the Michigan Basin.

9:40-10:10--Jim Duszynski, Senior Geologist and Permit Coordinator with the Geological and Land Management Division of the Michigan Department of Environmental Quality, will review the history of oil and gas production in Michigan. He will show that production cycles track technology and interpretive success of the major basin plays and discuss how historical exploration can forecast potential opportunities that may remain. A Michigan State University graduate, Jim has personal oil field experience from the Albion-Scipio discovery through 3-D seismic imaging, as an observer and explorer. Jim has served two decades with State government and 11 years in the industry, exploring from West Virginia to Colorado and Oklahoma to Alpena. His current interests are work on a Subsurface Hazards Database of geological drilling problems with suggested successful countermeasures.

10:10-10:25--Coffee break

10:25-10:55--Dr. A. S. (Buddy) Wylie, Research Scientist/Engineer with Michigan Technological University, will share the structure and isopach maps he created of potential petroleum source rocks and producing horizons in Michigan. Using these maps, we can visualize the prospectivity of subsurface formations. Based on data from the Michigan Department of Environmental Quality oil and gas information system, he mapped these potential source rocks: Antrim, Amherstberg, Salina, Niagara, Collingwood, and Foster Formations. Producing horizons mapped include: Michigan Stray, Berea, Antrim, Traverse Group, Dundee, Detroit River, Richfield, Sylvania, Salina A-1, Niagara, Burnt Bluff, Trenton/Black River, St. Peter, and Prairie du Chien/Glenwood. Where available, historical annual production plots were posted on the maps, showing both annual production and cumulative production vs. time. These formations continue to produce important quantities of oil and gas in Michigan and many have significant remaining exploration and exploitation/EOR potential. Buddy has worked for 20 years in industry in petroleum exploration and reservoir characterization.

10:55-11:25--Dr. Joseph R. Hatch, Research Geologist, U. S. Geological Survey, will summarize work characterizing the hydrocarbon source-rock potential and geochemistry of natural gases and oils produced from the five significant Paleozoic petroleum systems in the Michigan Basin. Joe obtained a Ph.D. in geology from the University of Illinois in 1972 and has worked at the U. S. Geological Survey in Denver since 1974. Previous relevant experience includes studies of hydrocarbon source-rock potential, oil geochemistry, and oil-source rock correlations in the Paleozoic sections of the Anadarko, Forest City, Salina, Illinois and Appalachian basins, assessments of coal-gas resources in the Black Warrior, San Juan, Illinois and Arkoma basins and Cherokee platform, and assessments of shale-gas resources in the Illinois and Appalachian basins.

11:25-12:00--Dr. William B. Harrison, III, Professor Emeritus and Director of the Michigan Basin Core Research Laboratory in the Department of Geosciences, Western Michigan University, will present a core workshop from the specific source rocks identified by Joe Hatch. He will also review the resources available at the Core Laboratory for exploration and prospect identification including: Geological publications, geologic and subsurface maps, drillers' reports, well scout data, oil and gas well production data, well test data, various types of wireline logs, drill cuttings samples, drill core samples and related well and geological information. Bill founded the Core Lab 21 years ago, and has authored dozens of papers on Michigan geology.

12:00-1:00--Lunch

1:00-1:40--Dr. John E. Repetski, Research Geologist, U.S. Geological Survey, will present and discuss thermal maturation isograd maps, based on conodont color alteration index (CAI), for two stratigraphic intervals in the Michigan basin: (1) the Lower to lower Middle Ordovician [including the Prairie du Chien Group, and "Foster" and "Bruggers" formations], and (2) the Upper Ordovician [including the Black River and Trenton Groups]. These maps, and the conodonts analyzed to construct them, can be used to help determine the basin's burial history and thermal evolution, as well as to solve stratigraphic problems. Since obtaining his Ph.D. in geology at the University of Missouri-Columbia, John has spent almost 30 years with the USGS. He has worked with conodonts from all continents, concentrating primarily on North American Cambrian and Ordovician. He has applied conodont work to diverse projects, ranging from mapping, groundwater, earthquake hazards, and mineral and energy resource assessments.

1:40-2:10--Dr. Daniel O. Hayba, Research Geologist, U.S. Geological Survey, will present results from a basin evolution modeling study of the Michigan Basin. This research involved both 1-D and 2-D simulations of stratigraphic evolution, heat transport, and fluid migration. The parameters used to construct the model are derived from an analysis of digital lithologic and electric logs. A basin-wide synthesis of thermal maturation data was used to constrain the model and to predict the timing of maturation. Dan has been with the USGS for more than 20 years and has been involved in various aspects of numerical modeling for nearly 15 years.

2:10-2:25--Coffee break

2:25-3:00--Dr. E. Charlotte Sullivan, Research Assistant Professor at the Allied Geophysical Laboratories, University of Houston, Dr. Kurt Marfurt, Director of the Laboratory, and C.H. "Chuck" Blumentritt, Researcher at the Laboratory, will address their work on imaging features in Trenton-Black river rocks in the Appalachian Basin with implications for similar work in the Michigan Basin. They will discuss recent advances in geometric seismic attributes at the AGL,

and application of this technology to the imaging of fracture, joints and small-scale faults, and to the goal of separating seismic signatures related to paleokarst, hydrothermal processes and tectonic collapse features. They will illustrate their work through examples from Texas, the Appalachian and Michigan Basins, and Canada. Charlotte has 30 years' industry experience with a focus on carbonate reservoirs in the Philippines, Qatar, Trinidad, Mexico, West Texas, New Mexico, and the Eastern U.S. Currently she spends considerable energy on the calibration of seismic attributes. Kurt has worked both in academia and industry and has spent the last 23 years doing or leading research efforts in modeling, migration, signal analysis, basin analysis, seismic attribute analysis, reflection tomography, seismic inversion and multicomponent data analysis. Chuck worked for 29 years as a geophysicist, and is now applying newly developed volume-based seismic attributes to data from a variety of geologic settings while completing his PhD studies.

3:00-4:00--Roundtable discussion by Michigan producers, including :Brian Deans, Bob Butka, Tim Maness, Dan McGuire, Allen Modroo, Tom Pangborn, Dennis Schmude

Workshop fee: \$75 if received by us by September 14. After that, it's \$95.

Refunds for cancellations: We'll cheerfully refund in full for cancellations received by September 14. After that, we'll refund if a paid participant takes your place (sorry).

Time and Place: September 23, 2004, from 8:30am to 4:00pm at the Crowne Plaza, 5700 28th St. SE, Grand Rapids, MI 49546, phone (616) 957-1770 or (888) 957-9575. For travel directions, please see their site:

<http://www.grandrapidscrowneplaza.com>

Workshop Registration Form

Petroleum Systems of the Michigan Basin—A look at Remaining and Undiscovered Oil and Gas Resources

NAME _____

COMPANY _____

ADDRESS _____

PHONE _____ Email _____
(please print)

How are you paying? (please check one payment type)

By Credit Card: (please circle one card type) ____ Visa* ____ MasterCard*

Card No. _____ Exp. Date _____

*Sorry, we can't take Discover or American Express. You'll see a charge by Western Michigan University on our credit card bill for the workshop.

To register with a credit card by phone, please call Kathy at (269) 387-5486 or Linda at (269) 387-8633 or e-mail linda.harrison@wmich.edu

By check—make payable to "WMU Geosciences Department" and mail to:

Workshop
Geosciences Department
Western Michigan University
Kalamazoo, MI 49008-5241

By fax to: (269) 387-5513

Workshop fee: \$75 if received by us by September 14. After that, it's \$95. You'll get a workbook, refreshments, and lunch.

Refunds for cancellations: We'll cheerfully refund in full for cancellations received by September 14. After that, we'll refund if a paid participant takes your place (sorry).

For more information, please contact:

Bill Harrison by phone at (269) 387-8633 or email harrison@wmich.edu or

Linda Harrison by phone at (269) 387-8633 or email linda.harrison@wmich.edu



**2004 TRI-STATE GEOLOGICAL
FIELD CONFERENCE
2-3 OCTOBER 2004**

**Join us for a geologic journey around
Lake Winnebago and the Fox River Valley**

- See Pleistocene localities related to Glacial Lake Oshkosh •
 - Explore the Silurian rocks of the Niagara Escarpment •
 - Learn about the regional lime & building stone industry •
 - Examine groundwater issues related to urbanization •
 - Study the complexities of Ordovician geology •
 - Go caving in the Niagara Escarpment •
 - Visit the Weis Earth Science Museum •

**Sponsored by the
Weis Earth Science Museum**

**Check our website at www.fox.uwc.edu/wesm/events.html
and scroll to Tri-State for registration information,
or call 920.832.0125**

•• Registration form and payment due September 20, 2004 ••

Registration Information

Fees: The fee is \$55 for students and \$65 for all other registrants. The registration fee includes reception on Friday night, transportation, snacks, lunch and the banquet on Saturday, snacks on Sunday morning, and the guidebook. The registration fee does *not* include any lodging nor lunch and transportation on Sunday.

Registration: Please complete the registration form (please print), and send it along with your payment (check or money order made payable to WESM/Tri-State) to:

Weis Earth Science Museum
UW-Fox Valley
1478 Midway Rd.
Menasha, WI 54952

Confirmation of Registration: Confirmation and additional field trip information will be sent upon receipt of the registration form and fees. This information will be sent by e-mail, when possible.

Deadline for receipt of registration is September 20, 2004.

Questions? e-mail jkluesse@uwc.edu or call 920.832.0125

A Reminder about Lodging

Make your hotel reservations early; there is a Packer home game that weekend and rooms are in short supply. Visit the Weis website at www.fox.uwc.edu/wesm for hotel information.