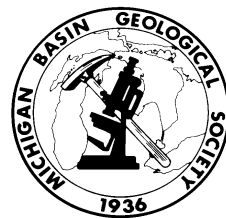




ON THE ROCKS

A Newsletter of the Michigan Basin Geological Society



2018-2019 Edition 2

www.mbgs.org

October 2018

ANNOUNCEMENTS

MBGS Membership Meeting, October 24th, 2018: Michigan Basin Geologic Society meeting will be hosted at Michigan State University in the Natural Science Building, East Lansing, Michigan. Dr. Peter Voice, Western Michigan University, will present "Revised Bedrock Map of Wayne County, Michigan: An Opportunity to reassess the natural resources of Wayne County". Reservations are not required. More information is included in the newsletter.

MBGS has two (2) new publications available! See details on page 7 of the newsletter.

MBGS FIELD EXCURSION

**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.

MBGS Members Ice Mountain Field Excursion – September 7, 2018



MBGS members suit up for a tour of the Ice Mountain Spring Water Bottling Facility located in Stanwood, Michigan. After the plant tour, presentations, and lunch, the group made visited one of the well and spring sites located near Evart, Michigan.

MBGS ONLINE STORE The Michigan Basin Geological Society has an on-line store. Shop for shirts, hats, bags and other items. Check it out at: <http://www.cafepress.com/mbgs>.

September MBGS Membership Meeting

Dr. Peter Voice, Western Michigan University

presenting

“Revised Bedrock Map of Wayne County, Michigan: An Opportunity to reassess the natural resources of Wayne County”

Peter Voice with contributions from William B. Harrison III, Katharine Rose, Jennifer Trout

Where: Michigan State University, College of Natural Science Building, Room 204, 288 Farm Lane, East Lansing, MI 48823, (517) 355-4470

When: October 24th, 2018. Executive committee meeting at 5:00 PM at Claddagh Irish Pub, Eastwood Towne Center, (members welcome), membership meeting and presentation at 7:00 PM

Cost: None

Abstract: The Michigan Geological Survey through the US Geological Survey Statemap Program has constructed a revised bedrock map of Wayne County, Michigan. Previous maps by Sherzer (1911) and Mozola (1969) were hampered by lack of well control in northern and western Wayne County.

Wayne County is densely urban through much of the eastern and southern portions of the county, with over 1.8 million people living in the area. Current revitalization programs and extensive renovation of many of the major highways has led to recognition among the city planners and administrators that natural resources are key components to infrastructure programs. Wayne county has historically produced sand (glass, injection molds, construction fill), clay (ceramics), rock salt (road de-icer), brine and sulfur (various chemical applications), and oil and gas. The Detroit Salt Mine produces 2-3 million tons of rock salt a year from underground mines below Detroit.

Infrastructure planning has promoted new geological investigations that have yielded a wealth of subsurface bedrock samples and data. Michigan Department of Transportation projects as well as a proposed combined sewer overflow system in northern Wayne County yielded more than 100 cores in the past decade. Several quarries in southeastern and southern Wayne County provided access to samples and estimates of the bedrock surface elevation beneath thin glaciolacustrine deposits. Combined with historical drilling, a revision of the Wayne county bedrock map has become feasible.

The revisions to the published map include refinements of the contacts between Devonian and Mississippian bedrock units in northern and central Wayne County. Access to both historical and modern cores has provided valuable materials for revising descriptions of the rock units in the area – some of which have not been described in decades. Mozola (1969) did not attempt to subdivide the Detroit River Group or Traverse Group into formations. The new cores show that these formations are mappable through the county.

Biography:

Dr. Voice is a faculty Teaching Specialist and Director of K-12 Outreach at the Department of Geological and Environmental Sciences and Michigan Geological Survey, Western Michigan University. He received his doctorate from Virginia Tech where he used detrital zircon U-Pb age dates to understand how continents grew over time. He teaches a variety of courses including Historical Geology, Dinosaurs, Structural Geology, Clastic Depositional Systems and Clastic Petrography and Provenance. His current research is focused on Silurian and Devonian rocks of the Michigan Basin. He also runs the K-12 outreach program for the Michigan Geological Survey which works with over 10,000 children a year. Dr. Voice was recently elected as the President-Elect of the Michigan Earth Science Teachers Association; his term begins in January.

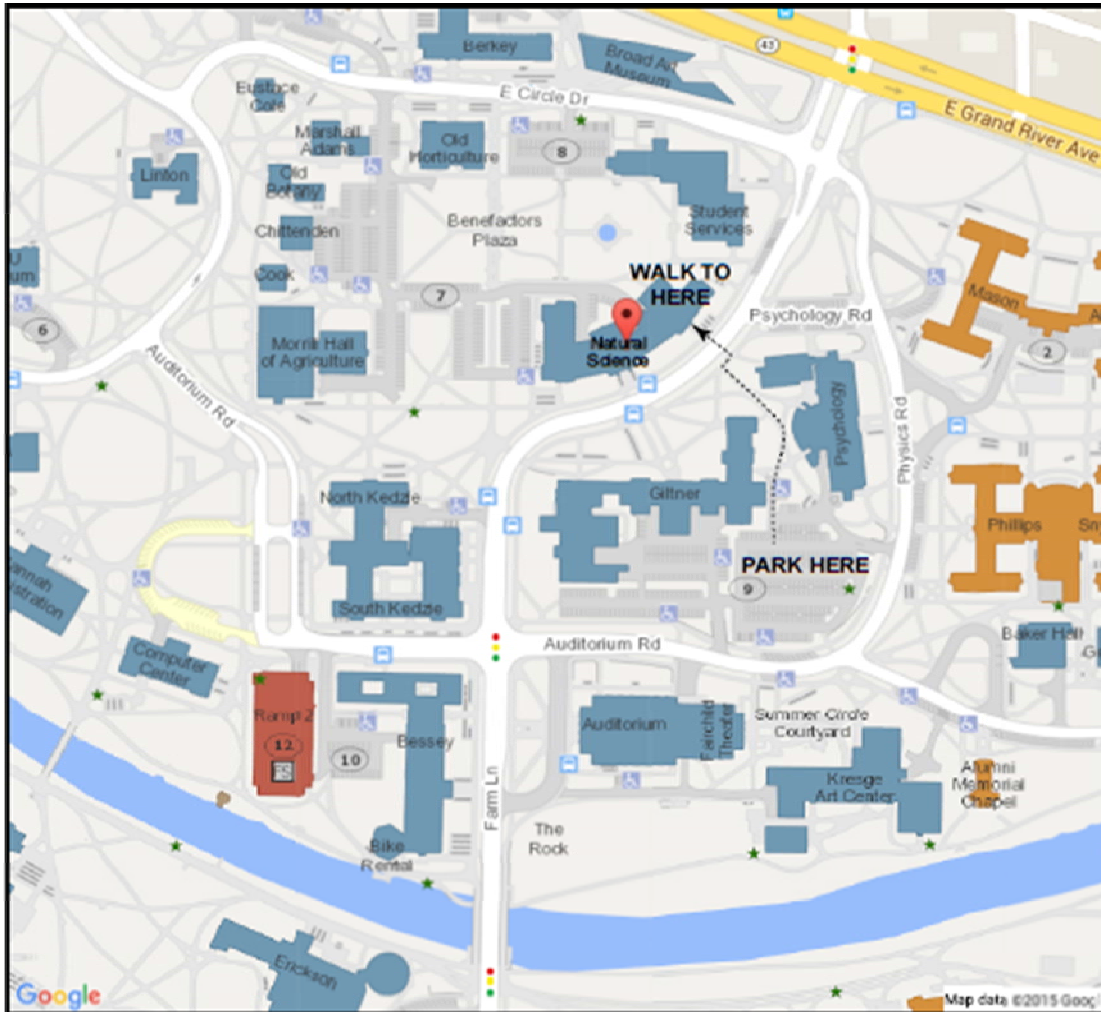


He has written several papers on Michigan geology including:

- Voice, P. J., Harrison, W. B., III, and Grammer, G. M. 2018, A reevaluation of the Burnt Bluff Group (Llandovery, Silurian, Michigan Basin) from Subsurface and Outcrop Data: Development of a Time-Transgressive Depositional Model, in Grammer, G. M., Harrison, W. B., III, and Barnes, D. A. (eds.), Geological Society of America Special Publication 531, Geological Society of America, Boulder, Co, p. 55-79.
- Harrison, W. B., III, and Voice, P. J. 2018, Evaporite facies of the Michigan Basin. , in Grammer, G. M., Harrison, W. B., III, and Barnes, D. A. (eds.), Geological Society of America Special Publication 531, Geological Society of America, Boulder, Co, p. 197-216.
- Voice, P. J., 2016, Michigan Geology: A Bibliography, Michigan Geological Survey Data Compilation Series, Volume 1, 342 p.
- Voice, P. J., and Harrison, W. B. III 2014. Paleozoic Geology of the Central Upper Peninsula of Michigan. Michigan Basin Geological Society and Michigan Geological Survey, 111 pp.
- Venable, N. B. H.; Barnes, D. A.; Westjohn, D. B. and Voice, P. J. 2013. Pennsylvanian fluvial-deltaic Depositional Systems in Central Lower Michigan: Sedimentology, Stratigraphy, and Hydrogeology of the Saginaw Aquifer. In Gillespie, R. (ed.). Insights into the Michigan Basin: Salt Deposits, Impact Structure, Youngest Basin Bedrock, Glacial Geomorphology, Dune Complexes, and Coastal Bluff Stability: Geological Society of America Field Guide 31:37-56.



Michigan State University
College of Natural Science Building, Room 204,
288 Farm Lane, East Lansing, MI 48823, (517) 355-4470



Between 5pm & 6pm you can park in Lot 9 behind Giltner Hall and the Psychology Building (former Physics and Astronomy building) for free. Otherwise you can try your luck with the metered slots clustered around the Natural Science Building and the adjacent Student Services Bldg, no charge after 6. MSU Interactive Map: <https://maps.msu.edu/>

LED FIELD LENS AND MBGS LANYARD AVAILABLE

The Michigan Basin Geological Society is offering geological field hand lens and lanyards. The field hand lens is a large 21mm lens with a 20X magnification. A pair of white LEDs provides illumination for all those darkened close-up viewing of rocks, minerals and fossils. A case is provided for the field lens with a key to remove the batteries. Batteries are included. The green lanyard has MICHIGAN BASIN GEOLOGICAL SOCIETY printed on one side of the 1" wide webbing. This lanyard is designed with a breakaway buckle clip and detachable keychain for versatile use and comfortable wearing. MBGS is offering the Lanyard/LED Hand Lens and Case combo for \$15 each and the Lanyard alone for \$5 each if picked up at a meeting or field trip. If you request to have your purchase mailed, standard costs for mailing container and postage will apply. Please contact Mark Wollensak at wollensak@voyager.net to order.





UPCOMING EVENTS

October 3-4, 2018: Michigan State University, 3rd Biennial Inland Lakes Convention, Grand Rapids, MI
<http://www.canr.msu.edu/michiganlakes/convention/>

October 7-11, 2018: AAPG Eastern Section Annual Meeting, Pittsburg, PA, <https://www.esaapg.org/meetings/>

October 14th, 2018: Michigan State University Museum celebrates “National Fossil Day”,
<https://www.museum.msu.edu/?event=national-fossil-day>

October 14- 19, 2018: AGI’s “Earth Science Week”. Since October 1998, the American Geosciences Institute has organized this national and international event to help the public gain a better understanding and appreciation for the Earth sciences and to encourage stewardship of the Earth. This year's Earth Science Week will celebrate the theme "Earth as Inspiration." <http://www.earthsciweek.org/>

October 19 – 21, 2018: Central Michigan Lapidary and Mineral Society, 53rd Annual Gem, Mineral, Fossil, Lapidary & Jewelry Show, Ingham County Fairgrounds, <http://michrocks.org/annual-show/show-info>

November 14th, 2018: MDEQ Air Permit to Install and Potential to Emit Workshop, Grand Rapids, MI
https://www.michigan.gov/deg/0,4561,7-135-3308_3333-455880--,00.html

November 29, 2018: Michigan Section AIPG Meeting, Weber’s Inn, Ann Arbor, MI,
<http://mi.aipg.org/default.htm>

December 6, 2018: MI-AWWA in partnership with MWEA, 2018 Cyber Security in the Water Sector Workshop,
<https://mi-water.site-ym.com/events/EventDetails.aspx?id=1138503&group=>

March 15-17, 2018: Michigan Gem and Mineral Society Show, Jackson, MI

May 19-20, 2018: AAPG Annual Conference and Exhibition, San Antonio, TX,
<https://www.aapg.org/events/conferences/ace>

MDEQ Calendar of Training and Workshops

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

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MICHIGAN BASIN GEOLOGICAL SOCIETY PUBLICATIONS 2018

The following list details the contents of each available CD-ROM.

This list is also available on-line at <http://www.mbgs.org/publications.html>

Prices include postage, handling and any applicable sales tax.

Orders for publications should be prepaid in U.S. dollars and addressed to:

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

HISTORICAL PUBLICATIONS DISK 1

Nine out-of-print publications – Cost - \$15

- The Stratigraphy of Manitoulin Island, Ontario, Canada, June 1954
- The Devonian and Silurian Rocks of Parts of Ontario, Canada and Western New York, June 1951
- The Traverse Group of the Northern Part of the Southern Peninsula of Michigan, June 1949
- The Devonian Strata of the London-Sarnia Area, Southwestern Ontario, June 1956
- The Ordovician Rocks of the Escanaba-Stonington Area, June 1950
- The Niagara Escarpment of Peninsular Ontario, Canada, June 1955
- Lower Paleozoic and Pleistocene Stratigraphy Across Central Wisconsin, May 1960
- Geology of Central Ontario, Canada, May 1965
- Classic Silurian Reefs of the Chicago Area, June 1998

HISTORICAL PUBLICATIONS DISK 2

Four out-of-print publications – Cost - \$15

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

HISTORICAL PUBLICATIONS DISK 3

Six out-of-print publications – Cost - \$15

- Pleistocene and Early Paleozoic of the Eastern Part of the Northern Peninsula of Michigan, June 1948
- Stratigraphy and Structure of the Devonian Rocks in Southeastern MI and Northwestern OH, June 1952
- Lower Ordovician and Upper Cambrian of Wisconsin, May 1990
- Guidebook to the Precambrian Geology and Metallogeny of the Central Upper Peninsula of Michigan, September 1991
- Diamond Bearing Kimberlite and Related Geology in the Upper Peninsula of Michigan, April - May 1993
- Karst Geology of Northeast Lower Peninsula, Michigan, April 1995

HISTORICAL PUBLICATIONS DISK 4

Six out-of-print publications – Cost - \$15

- Silurian Rocks of the Northern Peninsula of Michigan, June 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 1961
- Correlation Problems of the Cambrian and Ordovician Outcrops Areas, Northern Peninsula of Michigan, June 1967
- The Geology of Manitoulin Island, June 1968
- 1970 Field Excursions - Pleistocene, Devonian, Precambrian, May 1970

HISTORICAL PUBLICATIONS DISK 5

Five out-of-print publications – Cost - \$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, September 1989
- Geology of the Lake Erie Islands and Adjacent Shores, 1971
- Glacial Geology of Southwestern Michigan, Landforms of the Lake Michigan Lobe, Southwestern Michigan, September 2001

HISTORICAL PUBLICATIONS DISK 6

Eight out-of-print publications – Cost - \$15

- Guidebook for Ordovician Stratigraphy of the Cincinnati, Ohio and Richmond, Indiana Areas, June 1953
- Guidebook for Ontario Geological Excursion to Kettle Point –Owen Sound- Waubesa, June 1946
- Guidebook for the Stratigraphy of the Silurian Rocks in Western Ohio, May - June 1963
- Guidebook for Cambrian Stratigraphy in Western Wisconsin, May 1966
- Geology of the Manitoulin Area, Special Papers #3, September - October 1978
- Middle Devonian Cratonic Carbonates and Shales in Southwestern Ontario, November 1987
- The Richfield Challenge, A Review of the Richfield Developments in Michigan, 1952
- A Theory of Rogers City and Dundee Relationships in Central Michigan, Tom Knapp Masters Thesis, 1947

HISTORICAL PUBLICATIONS DISK 7

Six out-of-print publications – Cost - \$15

- Silurian Rocks of the Southern Lake Michigan Area, 1962
- Studies of the Precambrian of the Michigan Basin, 1969
- The Geology of the Marquette District: a Field Guide, May 1977
- Ordovician and Silurian Geology of the N. Peninsula of Michigan, 1980
- Special Paper #4: Ordovician and Silurian Rocks of the Michigan Basin and its Margins, 1985
- Upper Keweenaw Rift-Fill Sequence, Mid-Continent Rift System, Michigan, September 1988

HISTORICAL PUBLICATIONS DISK 8

Four out-of-print publications – Cost - \$15

- Niagaran Stratigraphy: Hamilton, Ontario, 1972
- Silurian Reef-Evaporite Relationships, 1974
- Special Papers #1: Middle Devonian Stratigraphy and Depositional Environments in the Michigan Basin, 1974
- Sedimentology and Paleogeography of the Pennsylvania Strata of Grand Ledge, Michigan, May 1989
- Paleozoic Geology of the Central Upper Peninsula of Michigan, August 2014

HISTORICAL PUBLICATIONS DISK 9

Five out-of-print publications – Cost - \$15

- Geology and the Environment: Man, Earth and Nature in Northwestern Lower Michigan, 1973
- Special Papers #2: The Belle River Mills Gas Field: Productive Niagaran Reefs Encased by Sabkha Deposits, Michigan Basin, 1977
- Geohydrology of Carboniferous Aquifers of the Michigan Basin, September 1994
- Sedimentology, Paleogeography and Geochemical Weathering of the Pennsylvania Strata of Grand Ledge, Michigan, September 1994
- Geological and Historical Field Trip to the Keweenaw Peninsula: A Tribute to Douglass Houghton: “Michigan’s Pioneer Geologist,” Field Guidebook, September 2016

A DIGITAL PUBLICATION

Northeast Lower Peninsula Geological Field Conference, 2004, T.J. Black and M.S. Wollensak, 133 pp, illus., maps, digital presentations and posters (available on CD-ROM only). Cost - \$10

- Road Log and Stop Descriptions by T.J. Black, D. Baxter and M.S. Wollensak
- Methane Gas Venting at Hemlock Lake, by T.J. Black
- The Glaciated Landscape in the Grand Traverse Bay Region of Michigan and the Nature of the Greatlakean Advance of the Laurentide Ice Sheet in Michigan, USA, poster by S.C. Lindstrom
- Thunder Bay Marine Sanctuary Sink Hole Investigations, poster by T.J. Black
- Evaluation of Relationships Between Hydrogeologic Environment and Petroleum Hydrocarbon Remediation in Quaternary Glacial Sediments, presentation by Lisa M. Botcher and Arden D. Davis
- Log Curve Amplitude Slicing of the Traverse Group in the Pentwater Field, Oceana County, Michigan, by Albert S. Wylie, Jr.
- Traverse Group Stratigraphy in the Michigan Basin - A Detailed Review, by Albert S. Wylie, Jr.

SPECIAL OFFERS

- Stratigraphic Lexicon for Michigan, 2001, prepared by MBGS and published by DEQ, **Cost - \$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 **Cost - \$35.**
- Historical CD Set - #1– #9 and 2004 NE LP Geological Field Conference (detailed above) for a special purchase price of **\$125 (best price for all).**

OTHER ANNOUNCEMENTS

American Geoscience Institute Publish report on state of recent Geoscience Graduates

The American Geosciences Institute's (AGI) Status of Recent Geoscience Graduates 2017 provides an overview of the demographics, activities, and experiences of geoscience degree recipients during the 2016-2017 academic year. This research draws attention to student preparation in the geosciences, their education and career path decisions, as well as examines some of the questions raised about student transitions into the workforce. This is the fifth consecutive year of this survey and report, and with this release, we are starting to detail emerging trends in the experiences of postsecondary geoscience students.

View the report at:

https://www.americangeosciences.org/sites/default/files/ExitSurvey_2017_Online_041018

Michigan State University Museum celebrates "National Fossil Day"

This year on Sunday, October 14, 2018 from 1-4 p.m. Come join an afternoon of family friendly fossil fun!

Activities Include:

- Michigan fossil dig & sift
- Junior Paleontologist hunt
- Fossil molds to make and take
- "Ask the Expert": a paleontologist will be on hand to answer your fossil questions and to identify specimens
- Fossil Puzzle Station
- Fossil ID competition with prizes
- And much more!

National Fossil Day (NFD) is a celebration organized by The National Park Service and the American Geosciences Institute to promote public awareness and stewardship of fossils, as well as to foster a greater appreciation of their scientific and educational value. More information may be found at: [the MSU Events Calendar.](#)

Use Mobile Devices to Discover the Soil Characteristics below your Feet

In the past, finding your location on WSS, and drawing or creating an Area of Interest was limited on mobile devices. Without a mouse, it was not possible to draw an area of interest (AOI) with touch screens. Thanks to the SoilWeb and Web Soil Survey (WSS) developers, new functionality has been created. They have collaborated to make it simple to use the SoilWeb screen to locate and quickly create an AOI for the screen shot of that location in WSS.

<https://content.govdelivery.com/accounts/USDANRCS/bulletins/1ad1941>