



ON THE ROCKS

A Newsletter of the Michigan Basin Geological Society



2019-2020 Edition 3

www.mbgs.org

November 2019

ANNOUNCEMENTS

MBGS November Meeting

MBGS Membership Meeting, November 13th, 2019: Michigan Basin Geologic Society meeting will be hosted at Michigan State University in the Natural Science Building, East Lansing, Michigan. Dr. Robb Gillespie, Western Michigan University, will present "Interactions of Late Wisconsin Saginaw and Michigan Glacial Ice-lobes in Michigan - Possible Michigan Lobe Event Defined". Information is included in the newsletter.

MBGS Vice President Election

Two candidates have graciously offered to serve as Vice President for MBGS for the 2019-2020 year. A ballot is included. Please take a moment to vote and submit by November 8th, 2019.

MBGS Membership Dues

It is time to submit the 2019-2020 MBGS membership dues. Annual membership is \$25 for members and \$10 for students. Please fill out the appropriate membership form (included) and mail in with payment before December 31, 2019.

OTHER NEWS

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@att.net to order.



November 2019 MBGS Membership Meeting

When: November 13th, 2019, 7:00PM

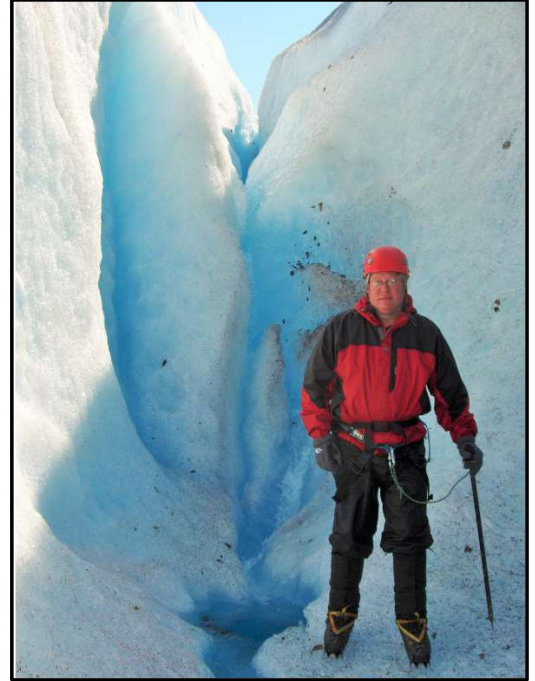
Where: Michigan State University in the Natural Science Building, East Lansing, Michigan

Speaker: Dr. Robb Gillespie

Presentation: “Interactions of Late Wisconsin Saginaw and Michigan Glacial Ice-lobes in Michigan - Possible Michigan Lobe Event Defined”

Abstract: Interactions of Late Wisconsin Saginaw and Michigan Glacial Ice-lobes in Michigan - Possible Michigan Lobe Event Defined

Traditionally, the extent of the Late Wisconsin Saginaw Lobe ice advance throughout Michigan has been delineated in the landscape by a belt of glacial moraines surrounding Saginaw Bay. However, new satellite imagery, DEMs, and LiDAR data sets have provided the basis for renewed, more detailed, analyses of previously mapped glacial landforms, drainage basins and associated river patterns. Analyses of the cross-cutting relationships of these features, combined with: (1) development of a more detailed, bedrock-topography map, and (2) sedimentary analyses of more than 320 newly collected Saginaw Moraine till samples, now makes it possible to re-interpret certain Michigan glacial events.



The hypothesis presented in this work focuses on the central portion of the Saginaw Lobe – Lake Border Moraine system (centered at Ithaca, Michigan in Gratiot County). It is postulated that the present-day, central portion of this series of moraines, rather than being produced by Saginaw Lobe ice advancing from the northeast (as traditionally interpreted), was instead produced by younger Michigan Lobe ice advancing from the west. Ice-flow directions are thought to be directly related to, and controlled by, bedrock topography. Advancing Michigan Lobe ice re-worked the central portion of the Saginaw Lobe – Lake Border Moraine system originally deposited by Saginaw Lobe ice, and re-deposited this material farther eastward, resulting in the eastward “bulge” of the central portion of the overall moraine system.

Development of stream drainage patterns also indicates westward retreat of glacial ice from this area. Current patterns are thought to have formed contemporaneously with moraine deposition. This pattern could only develop if eastward valleys were ice-free during a time when adjacent western valleys were still ice covered. Also, moraine patterns and landform features to the west of the area are consistent with landform systems-tracts formed by ice retreating west – northwest.

Recently, sediment analyses of till samples collected from the Saginaw Lobe – Lake Border Moraine system display compositions for the central portion of the moraine system that are different from those

of the northern and southern portions. This implies a distinctly different genesis for this portion of the Saginaw Lobe – Lake Border Moraine system.

Therefore, it is hypothesized that the central portion of the currently defined Saginaw Lobe – Lake Border Moraine system was formed by younger Michigan Lobe ice advancing from the west, rather than by older Saginaw Lobe ice advancing from the northeast (which formed the laterally contiguous, older portions of the Saginaw Lobe – Lake Border Moraine system).

Biography: Dr. Robb Gillespie is an Assistant Professor with the Department of Geological and Environmental Sciences, a Research Associate with the Michigan Geological Repository for Research and Education (MGRRE), and an associate of the Michigan Geological Survey, all located at Western Michigan University. He has been at WMU for the past sixteen years. Prior to this, he concurrently held geological teaching positions at Richland Community College and Collin County Community College in Dallas, Texas, while also employed full-time as an exploration geologist in the oil and gas industry.

Dr. Gillespie has more than 34 years of experience in the oil and gas industry. He worked 13 years for ARCO Oil and Gas in their domestic, international, and research groups. Then, in 1992, he co-founded Tres Rios Resources, Inc., an independent, Texas-based oil and gas company. He served as vice-president of that company until 2013 when he sold his interests to corporate partners.

During 1993-95, he consulted for the United States Department of Justice providing expert geological exploration review for a 1.2 billion dollar lawsuit between the Federal Government and ten of the world's largest oil companies.

Dr. Gillespie's geological specialties are:

- (1) Oil/Gas/Water reservoir delineation and characterization based on detailed stratigraphic analysis.
- (2) Detailing glacial events based on sedimentary depositional environments and associated geomorphological landforms.

He is currently focused on remapping glacial deposits, and better understanding glacial events, in central Michigan. He also continues to develop and teach undergraduate geology courses for the Department of Geological and Environmental Sciences at Western Michigan University.

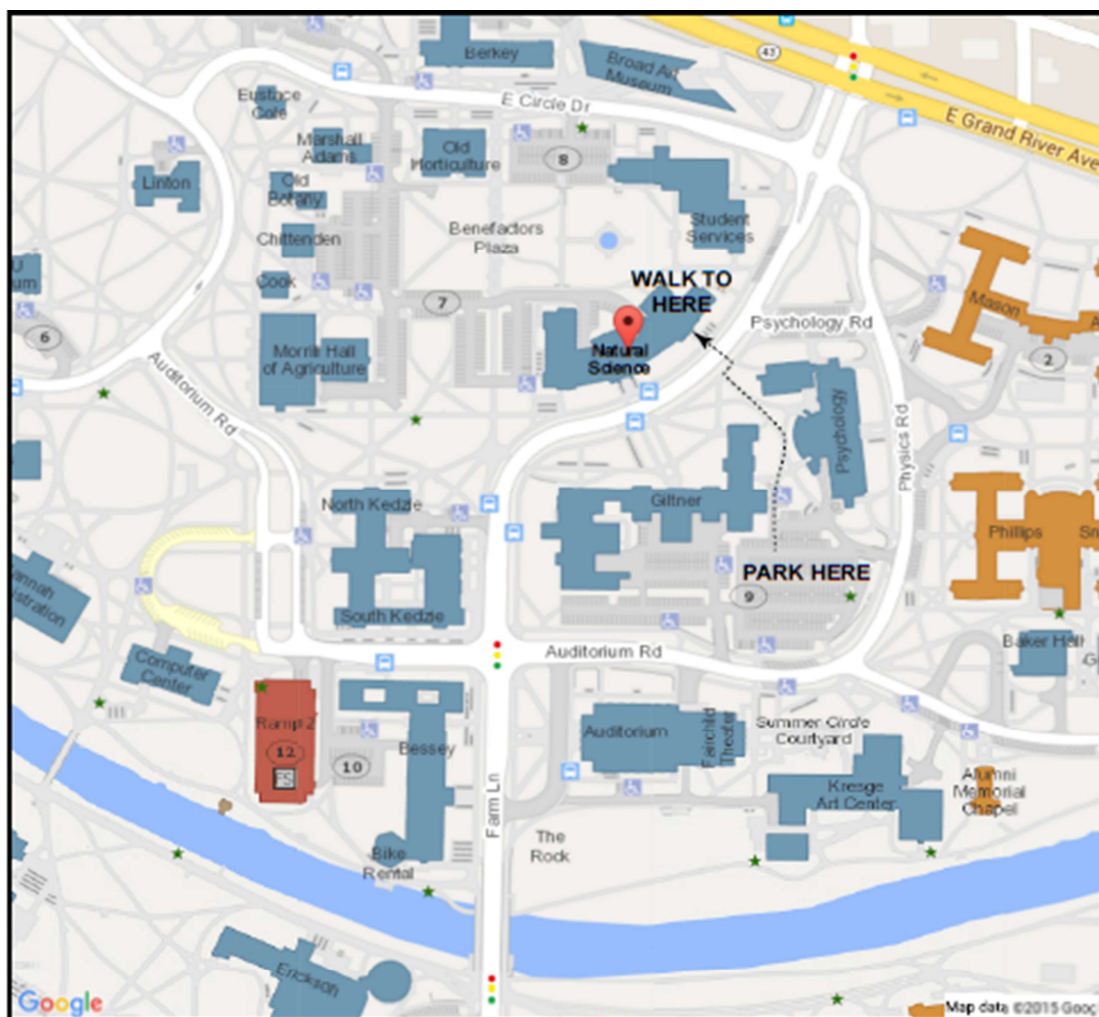


MBGS Monthly Membership Meeting, November 13th, 2019

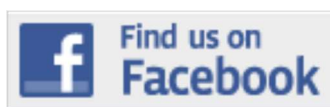
Michigan State University

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/>



EVENTS

November 2-3rd, 2019: Gem and Mineral Show, Midland, Michigan, <http://www.midmichrockclub.com/>

November 11th, 2019: Michigan Mineral Society Auction, Bloomfield Hills, Michigan <http://www.michmin.org/>

November 13th, 2019: Michigan Basin Geological Society membership meeting, www.mbgs.org

November 20-21st, 2019: EGLE Michigan Sustainability Conference, Lansing Center, Lansing, Michigan, https://www.michigan.gov/egle/0,9429,7-135-3308_3333-393527--,00.html

December 11th, 2019: Michigan Section AIPG Meeting, Weber's Inn, Ann Arbor, Michigan, <http://mi.aipg.org/default.htm>

December 12th, 2019: Michigan Basin Geological Society membership meeting, www.mbgs.org

January 8th, 2020: Michigan Basin Geological Society membership meeting, www.mbgs.org

February 12th, 2020: Michigan Basin Geological Society membership meeting, www.mbgs.org

March 12th, 2020: Michigan Basin Geological Society membership meeting, www.mbgs.org

April 8th, 2020: Michigan Basin Geological Society membership meeting, www.mbgs.org

EGLE Calendar of Training and Workshops

https://www.michigan.gov/egle/0,9429,7-135-3308_3333---,00.html

ONLINE RESOURCES

- **Michigan Geology Maps Available:** <https://www.michigan.gov/deq/0,4561,7-135-3304-116670--,00.html>
- **Digital Geology Library Overview:** https://www.michigan.gov/documents/deq/GIMDL-Catalog-2010-01-20_307979_7.pdf
- **GeoWebFace:** https://www.michigan.gov/deq/0,4561,7-135-3311_60700---,00.html
- **Digital Geology Library Mining Overview:** https://www.michigan.gov/documents/deq/GIMDL-Catalog-2013_06_22_mining_425595_7.pdf
- **Michigan Geological Survey:** <https://wmich.edu/geologysurvey>
- **USGS Michigan Geological Map Data:** <https://mrdata.usgs.gov/geology/state/state.php?state=MI>
- **CMU, Clarke Historical Library, Michigan Geology:**
https://www.cmich.edu/library/clarke/ResearchResources/Michigan_Material_Statewide/Michigan_Oil_and_Gas_Industry/History_of_Michigan_Oil_and_Gas/Pages/Michigan-Geology.aspx

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2019-2020

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MBGS PUBLICATIONS

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

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

MBGS — Publications
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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. Cercione 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.

MBGS HISTORICAL PUBLICATIONS ARE NOW AVAILABLE ON USB FLASH DRIVES (8GB).

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