



ON THE ROCKS

A Newsletter of the Michigan Basin Geological Society

2023-2024 Edition 3

www.mbgs.org

March 2024



MBGS Membership Meeting March 21, 2024

The Michigan Basin Geological Society meeting will be hosted at Grand Valley State University (GVSU) in Grand Rapids, Michigan. GVSU will provide a catered meal consisting of grilled hamburgers and hot dogs (vegetarian options available), potato salad, coleslaw, potato chips and dessert. Cost for \$20 MBGS members, \$10 for students. Dinner will be available at 6:00 PM and the presentation will start at 7:00PM. Reservations required. RSVP to Jennifer Trout at jennifer.l.trout@wmich.edu

Dr. Patrick M. Colgan, Geology Professor at Grand Valley State University will present “Working towards a stratigraphic lexicon for the glacial and Quaternary units of Michigan”.

Opportunity for Members: MBGS is seeking members who are interested in getting involved. We need a Vice President, Treasurer, and a Secretary for the 2024-2025 year. If you are interested in these opportunities, please reach out to any of the executive committee members.

Opportunity for Presenters: MBGS is seeking presenters for Michigan Basin geological related topics for our 2024-2025 membership meetings. If interested, please contact Andrea Munoz-Hernandez at munozhernandez@michigan.gov.

Core Display Educational Tool Available to Members

MBGS has a core display available for use that visually demonstrates permeability/porosity. There are educational posters available for use with the core display. Contact any of the officers to reserve this great educational tool.



Michigan Basin Geological Society

2024 March Membership Meeting

WHEN

March 21st, 2024

- Social hour - 5:00 PM
- Dinner – 6:00 PM
- Presentation - 7:00 PM

WHERE

Grand Valley State University

- L. William Seidman Center, Forum A
- 50 Front Ave SW
- Grand Rapids, MI 49504

WHO

Dr. Patrick Colgan, Professor of Geology, GVSU

COST

\$20 for MBGS members, \$10 for students (dinner included)



Reservations are needed. RSVP to Jennifer Trout at jennifer.l.trout@wmich.edu

“Working towards a stratigraphic lexicon for the glacial and Quaternary units of Michigan”

ABSTRACT The rock units of Michigan have been formally named and described in the *Stratigraphic Lexicon of Michigan* (Catacosinos et al. 2001). On the other hand, the glacial and Quaternary sediments of Michigan do not have a formal stratigraphic lexicon and formally named stratigraphic units. They are commonly designated as “glacial drift”, a useless relict and non-descriptive term. That said, glacial geologists and geomorphologists have developed an informal stratigraphic nomenclature of glacial and Quaternary units in Michigan (e.g. Larson 2011; Colgan 2015). In this talk, I will focus on the sedimentology and stratigraphy of glacial units in Lower Michigan and try to make the case that we do have information on the subsurface stratigraphy of Quaternary units and should work towards building a *Stratigraphic Lexicon of Quaternary Sediment in Michigan* as has been produced in other states like Wisconsin (e.g. Syverson et al. 2011). The benefits of such a lexicon are in applied groundwater and environmental geology, and in finding patterns in what can commonly seem random at the site-specific scale. Finally, a lexicon of glacial and Quaternary units could lead to improved prediction of aquifer and aquitard continuity/discontinuity and of unit properties and likely facies changes.

BIOGRAPHY Patrick (Pat) M. Colgan is Professor of Geology at Grand Valley State University. Professor Colgan earned a Ph.D. in Geology from the University of Wisconsin-Madison in 1996, and a M.S. in Geology from the University of Kansas in 1992. Before coming to GVSU in 2003 he was an Assistant Professor of Geology at Northeastern University in Boston, Massachusetts. Professor Colgan was born in Kansas, and grew up in Kansas City, Missouri. His ancestors were Irish, English, and German immigrants, most of whom came to America in the 1840s and 1850s to escape poverty and war.

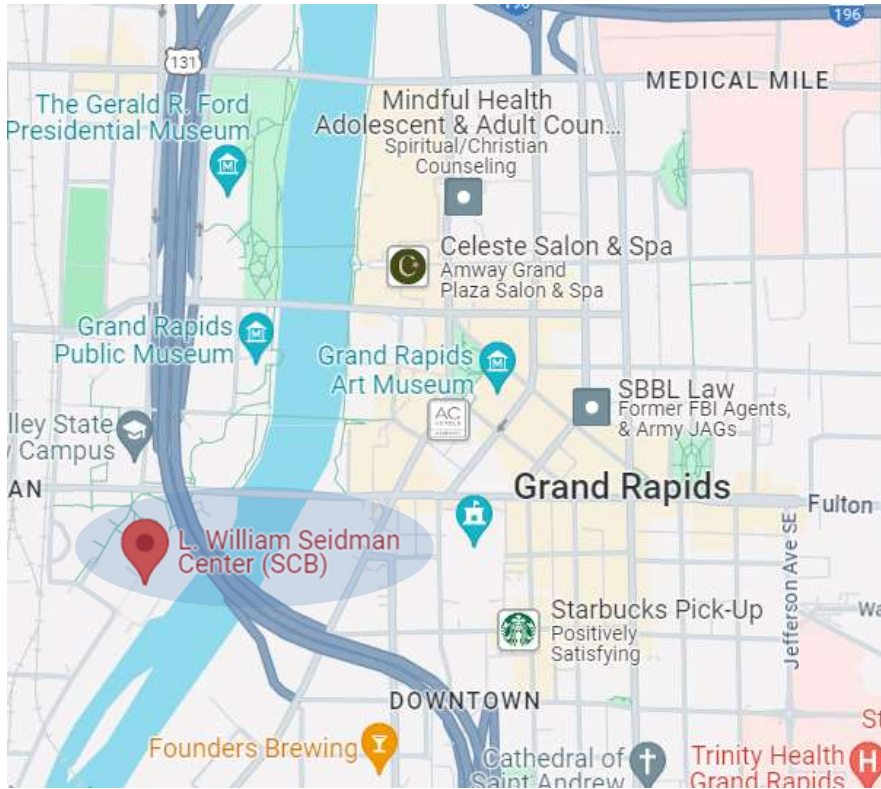
Professor Colgan is a geoscientist who studies glaciers, dunes, sediments and landforms, and their relationship to past and present climate change as well as applications such as groundwater and engineering geology. He teaches courses in introductory geology, Earth history, Earth surface systems, geomorphology, Quaternary history and glacial geology, geophysics, and engineering geology. His publications include geologic research in the Central Lowlands, Great Lakes, and New England regions of the U.S., and Iceland, Alaska, and the Tibetan Plateau of China. He is recently consulting to the Michigan Geological Survey in publishing the Surficial Geologic maps of Allegan, Ottawa and Muskegon Counties.

Prof. Colgan lives in Grand Rapids, Michigan along the banks of the Grand River. He is married to Kelly Heid and they share their life with a terrier mix named Sammy. He and Kelly both enjoy traveling, hiking, rafting/kayaking, reading, and exploring Earth together. Hobbies include history, classical numismatics, and enjoying music of all styles and genres.

Michigan Basin Geological Society

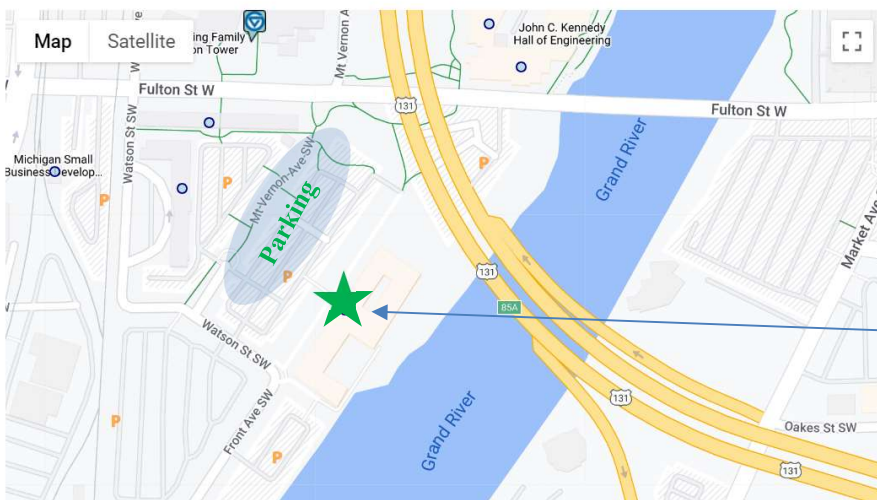
2024 Membership Meeting

March 21, 2024



Grand Valley State University
L. William Seidman Center, Forum A
50 Front Ave SW Grand Rapids, MI 49504

Maps & Directions



[Maps & Directions - Grand Valley State University \(gvsu.edu\)](https://www.gvsu.edu)

Parking is free for attendees for this event. Park in the Fulton Lot (designated for event guest)

RESOURCES

Links are provided for your reference. Please visit these sites to learn more about specific events and happenings. If you have an event to share, let us know!

American Institute of Professional Geologist – Michigan Section – <http://mi.aipg.org/newsletters.htm>

Central Michigan Lapidary and Mineral Society - <http://www.michrocks.org/>

Eastern Section AAPG - <https://www.esaapg.org/>

EGLC Calendar of Events - [Calendar \(michigan.gov\)](#)

Flint Rock and Gem - <https://flintrockandgem.org/events>

Michigan Association of Environmental Professionals - <https://www.maep.org/>

Michigan Basin Geological Society – www.mbgs.org

Michigan Clean Water Corps - <https://micorps.net/about/>

Michigan Mineralogical Society - <https://www.michmin.org/>

Midwest Mineralogical and Lapidary Society - <http://www.mmls.us/>

Rock Clubs in USA - [All Mineral, Rock, Gem Shows, GeoSites, Rock Clubs in USA \(rockandmineralshows.com\)](#)

Society of Petroleum Engineers - <https://www.spe.org/events/calendar/>

ONLINE RESOURCES

- **American Geoscience Institute – Interactive Michigan Geology Maps:** [Interactive map of the geology of Michigan | American Geosciences Institute](#)
- **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
- **Digital Geology Library Mining Overview:** https://www.michigan.gov/documents/deq/GIMDL-Catalog-2013_06_22_mining_425595_7.pdf
- **Digital Geology Library Overview:** https://www.michigan.gov/documents/deq/GIMDL-Catalog-2010-01-20_307979_7.pdf
- **GeoWebFace:** [GeoWebFace \(michigan.gov\)](#)
- **Michigan Department of Environment, Great Lakes and Energy – Calendar** [Calendar \(michigan.gov\)](#)
- **Michigan Geological Survey:** [Michigan Geological Survey | Western Michigan University \(wmich.edu\)](#)
- **USGS Michigan Geological Map Data:** [Michigan geologic map data \(usgs.gov\)](#)

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PUBLICATIONS: VACANT

ELECTRONIC PUBLICATIONS: Please contact an officer for information

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MBGS PUBLICATIONS

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

Historical publications now available on USB Flash Drives". Each USB Flash Drive is 8GB

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. Cambrey, 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.

20th Annual AIPG Michigan Section Golf Outing Tuesday September 10, 2024

The 20th Annual AIPG Michigan Section Golf Outing promises to be another successful event. Proceeds generated from the outing benefit the AIPG Michigan Section Student Chapters and educational awards, which provides thousands of dollars to a variety of worthy projects every year. Your generosity has been and will continue to be the key to enabling organizations and schools to provide meaningful educational programs and activities in the Geosciences.

This event also offers our sponsors exposure to many of the most influential professionals in our industry. **Registration will be open on February 1, 2024.**

This year's outing will be once again at the beautiful Fox Hills and specifically their world class Golden Fox course in Plymouth, Michigan.

**Place: Fox Hills – Golden Fox
8768 N. Territorial
Plymouth, MI 48170**

Event: 18-Hole Scramble

Date: September 10, 2024

Registration: 7:45 to 8:45 am

Shotgun Start: 9:00 am

Registration

Register/Pay by **August 1**, \$700/foursome, \$200/Individual

Register/Pay after **August 1**, \$800/foursome, \$225/Individual

Golfer 1: _____

Golfer 2: _____

Golfer 3: _____

Golfer 4: _____

Registration and payments can be completed at the link below

[American Institute of Professional Geologists - 20th Annual Golf Outing \(eventregisterpro.com\)](https://eventregisterpro.com)
Additionally, registration can be done manually by completing this form and mailing it and a check to the information below. Please make sure to provide the point of contact for your foursome and the names of all golfers:

Make Checks to:
Michigan AIPG
630 Piper Road
Haslett, Michigan 48840
Attn: Kalan Briggs briggsk2@michigan.gov

Call 248-635-4576, or e-mail Kalan to reserve your place!

The AIPG-MI Section is a nonprofit 501(c)(6) Organization

Company: _____

Contact: _____

E-mail: _____

Phone: _____

Registration Includes: Continental Breakfast, green fees, range balls, lunch at turn, networking opportunities, and dinner. Also includes: 50-50 drawing, raffle prize baskets, and Grand Prize raffles along with other prizes including, Putt-4 Dough for \$2,500, men's and women's Longest Drive and Closest-to-Pin contests, and goodie bags for all participants!

20th Annual AIPG Michigan Section Golf Outing

Tuesday September 10, 2024

Sponsor Package Information

Sponsorship pricing levels are detailed below. We would like to humbly request that all sponsors assemble and donate a charity basket for raffling. Charity baskets can be of any theme and requested to be of minimum \$35 value (or more). Raffles tickets will be sold throughout the event with winners being drawn at the end of the event immediately following event ceremony and announcements.

Executive Sponsor - \$2,000 (2 available)

- 1 foursome and 33% discount for additional golfers
- Highest visibility signage at the event, including at dinner
- Corporate recognition at the awards presentation

Beverage Sponsor - \$800

Investment includes:

- Signage at the club house and on the beverage cart.
- Corporate recognition

Breakfast/Luncheon Sponsor - \$600

Investment includes:

- Signage at the breakfast and at the turn grill/tent.
- Corporate recognition

Hole-in-one Sponsor - \$600 (2 available)

- Signage on all Par 3 Holes.

If a golfer hits a hole-in-one, the prize will be, either \$10,000, a golf vacation or a deluxe set of irons.

Tee Box or Hole/Flag Sponsor - \$250 (25 available)

Investment includes:

- Choice of tee box or green signage

Skill Sponsor – \$300 (4 available)

Investment includes:

- Tee box signage
 - Corporate recognition
- “Longest Drive”, “Closest to Pin” awards to Male/female for each.

Putt-4-Dough Sponsor – \$400

Investment includes:

- Signage on the putting contest area, corporate recognition during the event (includes contest coordination at the turn and following golf provided by you). Provides interaction with all participants.

Team Photo Sponsor: - \$400

Investment includes:

- Signage and option to provide a photographer from your organization.

Goodie Bag Sponsor - Give-away items for 100 or more golfers (open and encouraged for all sponsors!)

International Ni-Cu Symposium August 6-8th 2024

International Ni-Cu Symposium



Lakehead University, Thunder Bay, Canada

Call for Abstracts

We are planning a series of technical sessions with presentations on the latest research for a wide range of topics on Ni-Cu-PGE mineral systems. Sessions will be dedicated to deposits in the Midcontinent Rift System (MRS) and in other global settings including more unconventional deposits, such as those in collisional/post-collisional settings. Other sessions will be dedicated to topics such as regional exploration, structural controls, and Ni-Cu-PGE mineralizing processes related to hydrothermal or magmatic mechanisms (see [website](#) for details of sessions).

Thunder Bay is ideally situated for the conference owing to its endowment of remarkable geology, varied Precambrian rocks and nearby Ni-Cu-PGE deposits within the Mesoproterozoic MRS and the Archean Superior Province. Pre- and post-conference field trips are planned to visit (i) the Archean Lac des Iles Mine, (ii) the MRS-related Tamarack deposit and the Duluth complex, and (iii) the Coldwell Complex of the MRS.

For your abstract:

- Please use the template provided on the meeting [web page](#)
- Submit abstracts as a Word document
- Maximum length is two pages including figures and references
- Submission deadline is April 8th, 2024



BIG ROCK
EXPLORATION

GENERATION PGM

