



# ***ON THE ROCKS***

*A Newsletter of the Michigan Basin Geological Society*



2023-2024 Edition 2

[www.mbgs.org](http://www.mbgs.org)

December 2023

**MBGS Membership Meeting January 10<sup>th</sup>, 2024:** The Michigan Basin Geologic Society meeting will be hosted at Western Michigan University in the Michigan Geological Repository for Research and Education Building, Kalamazoo, Michigan. A picnic meal (brats with the fixings and side salads) will be available free for attendees. Come early for a social hour at 5:00 PM. Dinner will be available at 6:00 PM and the presentation will start at 7:00PM. Reservations are requested. Please RSVP to Jennifer Trout at [jennifer.l.trout@wmich.edu](mailto:jennifer.l.trout@wmich.edu)

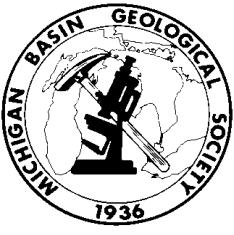
Dr. Robb Gillespie, Senior Research Associate with the Western Michigan University Geological and Environmental Sciences Department, will present “Interactions of the Saginaw and Lake Michigan Glacial Lobes - The Kalamazoo County Mapping Project”.

**Opportunity for Members:** MBGS is seeking members who are interested in getting involved. We need a Vice President, Treasurer, and a Secretary for the 2023-2024 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 2023-2024 membership meetings. If interested, please contact Andrea Munoz-Hernandez at [munozhernandez@michigan.gov](mailto:munozhernandez@michigan.gov).

**MBGS March Meeting:** MBGS will hold a March meeting at Grand Valley State University. Information will be sent out to members soon.

**MBGS Membership Dues:** MBGS continues to strive to provide a platform for geologist and environmental professionals to connect and offer learning and field trip opportunities. For the 2023–2024-year, membership fees will be \$35. Invoices are included in the newsletter, or you can pay online with a credit card through PayPal on our website. Student memberships are **FREE** with registration from the MBGS webpage [www.mbgs.org](http://www.mbgs.org). All membership dues must be submitted by January 31, 2024, for members to remain active.



## Michigan Basin Geological Society January 2024 Membership Meeting

### *Interactions of the Saginaw and Lake Michigan Glacial Lobes - The Kalamazoo County Mapping Project*

**WHO:** Dr. Robb Gillespie, Senior Research Associate with the Western Michigan University Geological and Environmental Sciences Department

**COST (includes dinner):** Free for members, brats and side salads

**WHEN:** January 10<sup>th</sup>, 2024, Social hour - 5:00 PM , dinner – 6:00 PM, presentation - 7:00PM. Reservations are requested. Please RSVP to Jennifer Trout at [jennifer.l.trout@wmich.edu](mailto:jennifer.l.trout@wmich.edu)

#### **ABSTRACT**

Tunnel valleys have played a significant role in the development of the Kalamazoo County, Michigan glacial landscape. Northeast-southwest trending tunnel valleys associated with the Saginaw Lobe cut across Kalamazoo County, as well as less developed, northwest-southeast trending tunnel valleys associated with the Lake Michigan Lobe. These two tunnel valley systems influenced the direction of subsequent ice movements and dictated development of associated depositional patterns and post-glacial fluvial networks.

Northeast-southwest trending drumlins are observed in the southeast portion of the county. They were formed by Saginaw ice that originally extended farther southwest than currently observed. Computer-generated topographic flooding-surfaces indicate that mass movements associated with the remaining drumlins all occur at approximately the same water level. Thereby, a closely linked origin for all these mass failures is suggested.

Glacial channels, kettle lakes, and pitted/hummocky terrain features are observed in north-east Kalamazoo County. They formed as Saginaw ice retreated to the northeast, creating the large outwash fan that now buries: (1) the north central portion of the county, and (2) two major northeast-southwest trending Saginaw Lobe tunnel valleys. Landforms covering central and western Kalamazoo County are the result of Lake Michigan ice forming the Kalamazoo moraine and its eastward-extending outwash apron.

Andrew Kozlowski, proposed that the early Kalamazoo River cut through the Kalamazoo Moraine by flowing to the east, not to the west, as it currently flows. This temporary eastward flow was interpreted to be the result of catastrophic drainage of a proglacial lake to the west. This was followed by a second high-volume flooding event; this time from the northeast (Barry and Eaton Counties). Much of south-central Kalamazoo County, originally deposited as part of the Saginaw Lobe drumlin field, and the overlying Lake Michigan Lobe-Kalamazoo moraine outwash fan from the west, has been highly reworked, or even removed, as a result of these catastrophic events. These insightful interpretations of Kozlowski, Kehew, and others is supported by this recent, LiDAR-enhanced, mapping project.

## BIOGRAPHY

Dr. Robb Gillespie is currently a Senior Research Associate with the Western Michigan University Geological and Environmental Sciences Department. He has retired from teaching with the Department but is now “head wrangler” for the department’s Dino-Park. He is also associated with the Michigan Geological Repository for Research and Education (MGRRE) and the Michigan Geological Survey (MGS). Currently, he is completing the latest edition of the Kalamazoo County Surficial Map. Dr. Gillespie also has over 24 years of experience in the oil and gas industry having worked for ARCO Oil and Gas in their domestic, international, and research groups, and for COHO Resources redeveloping old oil fields. He has operated his own oil and gas consulting business since 1992, and co-founded Tres Rios Resources, Inc. (TRR), a small oil and gas company in 1993. Dr. Gillespie’s geological specialties range from glacial mapping and interpretation to subsurface reservoir delineation, characterization and modeling based on detailed stratigraphic analysis.



## 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/>

EGLE 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](http://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](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](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](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 \(usgs.gov\)](#)

**MICHIGAN BASIN GEOLOGICAL SOCIETY OFFICERS**  
**2023-2024**

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**PUBLICATIONS: VACANT**

**ELECTRONIC PUBLICATIONS:** Please contact an officer for information

**WEBMASTER: JOHN ESCH**, [eschj@michigan.gov](mailto:eschj@michigan.gov)

# 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

<https://www.mbgs.org>

**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- Waubauskene, 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 Keweenawan 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.



***Department of Geological and Environmental Sciences, College of Arts and Sciences  
Seeks Candidates for Director of Michigan Geological Survey***

Operation of the Michigan Geological Survey (MGS) was transferred to Western Michigan University's (WMU's) Department of Geological and Environmental Sciences in 2011 (<http://www.geology.wmich.edu/>). In January 2023, MGS was granted annual funding as part of the state budget to support the societal needs of Michigan. Under this funding, MGS has grown rapidly over the past year, adding new staff and projects related to geologic mapping, critical minerals, groundwater resources and usage, near surface resources, and natural hazards. The MGS Director will oversee all functions of the Survey to accomplish and maintain current mapping and research programs, and to support the expansion of mapping and research to assess Michigan's natural geologic resources, as mandated by the Michigan State Geologist and Department of Energy, Great Lakes, and Environment and the Governor's office.

**Responsibilities of the Director include:**

- (1) Providing coordination, oversight, and administration of the overall activities of MGS in consultation with the Chair of the WMU Geological & Environmental Sciences Department, the State Geologist of Michigan, the MGS Advisory Council, and the WMU Government Relations office;
- (2) Supervising the activities of operational units within the MGS including mapping, surface and subsurface geology, energy and mineral resources, geologic hazards, research, education, outreach, and water resources;
- (3) Developing strategic long-term plans for the MGS,
- (4) Developing new programs and funding initiatives to support the State of Michigan stakeholders,
- (5) Developing and implementing budgetary plans to support MGS activities,
- (6) Writing or guiding annual proposals for STATEMAP and Great Lakes Mapping Coalition grants, and producing maps meeting standards of the U.S. Geological Survey.
- (7) Writing research proposals and reports to funding entities that will benefit Michigan and student training and research, publishing research findings, and presenting at local, regional, national and international venues,
- (8) Attending relevant local and national meetings for state geological survey directors,
- (9) Conducting outreach and giving public presentations of MGS projects and results, and
- (10) Acting as a liaison between MGS and relevant regional, state and national organizations, committees and programs with interests in MGS related research, repository or outreach initiatives.

**Minimum qualifications**

- Master's degree in geosciences or closely related field,
- Minimum of 5 years relevant experience in industry, academia or a state geological survey that includes fundraising, securing grants and/or contracts, preparing professional reports and publications, and managing staff; and
- Strong oral and written communication skills, and experience with public outreach or communication.

**Preferred qualifications:**

- Ten years relevant experience, including experience working with geological surveys and/or state legislative units,
- PhD with a research focus on geologic mapping, energy, critical mine
- Professional

Applicants should submit on-line a cover letter, curriculum vitae using the following website: <https://www.wmujobs.org/postings/1637> and names and contact information for three references. Inquiries should be addressed to WMU HR, Review of applications will begin October 1 and continue until position is filled. Western Michigan University is an affirmative action/equal opportunity employer consistent with applicable federal and state law.





**Western Michigan University** is a vibrant, nationally recognized student-centered research institution with an enrollment of around 18,000. WMU delivers high-quality undergraduate instruction, has a strong graduate College, and fosters significant research activities. The Carnegie Foundation for the Advancement of Teaching has placed WMU among the 76 public institutions in the nation designated as research universities with high research activities.

- **INSIGHT into Diversity** consistently honors WMU for its outstanding commitment to diversity and inclusion.
- **Military Times** ranks WMU among the best institutions for veterans, and WMU is the only Michigan school to appear on all nine years of its annual Best for Vets list.
- **U.S. Department of State** data shows that WMU was No. 6 among producers of American Fulbright Scholars in 2016-17.
- **WMU** operates the nation's largest and most comprehensive collegiate support program for former foster-care youth and is an international model for teaching, research, learning, and public service related to foster care and higher education.
- **Washington Monthly** ranked WMU first in the state of Michigan on its impact on alumni earnings 10 years after graduation.

**Kalamazoo, MI:** Kalamazoo is a diverse community, located only two and a half hours by car from Chicago and Detroit and only 45 minutes from the beaches of Lake Michigan. It is in one of Michigan's designated research corridors, maintaining a strong life sciences/biotech presence and supporting two leading medical centers. With 263,000 people in the greater Kalamazoo area, the community offers an array of cultural events, entertainment, and all-season recreation. The city supports a nationally recognized symphony and has earned a reputation for a vibrant community theatre and visual arts scene. Kalamazoo is committed to social justice, community development and the elimination of generational poverty through its Shared Prosperity Kalamazoo initiative, with structural budgetary support provided by the City of Kalamazoo's Foundation for Excellence program. Kalamazoo also is the home of the Kalamazoo Promise, a scholarship program offered to all Kalamazoo Public School students that covers up to 100% of tuition and mandatory fees to any Michigan public (and many private) institution of higher learning.

**Salary:** Competitive and commensurate with qualifications and experience, with an excellent benefits package.



Applicants should submit on-line a cover letter, curriculum vitae using the following website: <http://www.wmich.edu/hr/careers-at-wmu.html> and names and contact information for three references. Inquiries should be addressed to WMU HR, Review of applications will begin October 1 and continue until position is filled. Western Michigan University is an affirmative action/equal opportunity employer consistent with applicable federal and state law.

The Michigan Department of Environment, Great Lakes, and Energy (EGLE) is currently recruiting for a Geologist 9-P11 position within the Oil, Gas, and Minerals Division (OGMD). This position is permanent full time, located in Lansing, and it is open to all applicants. Interested applicants must apply through NEOGOV.

If you are interested in obtaining more information or applying, click on the link below:

[Posting](#)

The Michigan Department of Environment, Great Lakes, and Energy (EGLE) is currently recruiting to fill (2) Environmental Engineer 9-P11/Licensed 12 positions within the Drinking Water and Environmental Health Division. The location of these positions will be either the Bay City, Cadillac, Kalamazoo, Grand Rapids, Jackson, Warren, Marquette District Office, OR Lansing Central Office at Constitution Hall, depending on the selected candidate. These positions are open to all qualified applicants. Interested applicants must apply through NEOGOV.

If you are interested in obtaining more information or applying for these positions, please click on the link below.

[Job Posting](#)

The Michigan Department of Environment, Great Lakes, and Energy (EGLE) is currently recruiting for a Departmental Manager 14 position within the Remediation & Redevelopment Division. This position is located in Lansing, MI and is open to all applicants. Interested applicants must apply through NEOGOV.

If you are interested in obtaining more information or applying for this position, click on the link below.

[Posting](#)

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The Michigan Department of Environment, Great Lakes, and Energy (EGLE) is currently recruiting for an Environmental Quality Analyst 9-P11 (*Limited-Term*) position within the Drinking Water & Environmental Health Division (DWEHD). This position is located at the Cadillac District Office, 120 W. Chapin St, Cadillac, MI. The position is open to all qualified applicants. Interested applicants must apply through NEOGOV.

If you are interested in obtaining more information or applying for this position, please click on the link below.

[Job Posting](#)

The Michigan Department of Environment, Great Lakes, and Energy (EGLE) is currently recruiting for an Accounting Technician 7-E9 position within the Water Resources Division. This position is permanent and located at Constitution Hall, 525 W. Allegan Street, Lansing, MI. Interested applicants must apply through NEOGOV.

If you are interested in obtaining more information or applying for this position, click on the link below.

[Job Posting](#)

<https://www.mbg.org>

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The Michigan Department of Environment, Great Lakes, and Energy (EGLE) is currently recruiting for a State Assistant Administrator 15 - Permit Administrator within the Executive Office. This position is located at Constitution Hall, 525 West Allegan Street; Lansing, MI. This position is open to all and interested applicants must apply through NEOGOV.

### [Posting](#)

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Michigan Geological Survey (MGS) is seeking to fill multiple research positions to support the current MGS mapping projects throughout the State of Michigan. Certain positions can be remote, but Kalamazoo is the base for some. These positions will close on January 17, 2024

#### **Senior Research Associate - Paleozoic Geologist**

<https://www.wmujobs.org/hr/postings/1918>

Michigan Geological Survey is seeking a Senior Research Geologist to provide geologic research support and leadership related to Michigan's and adjacent states' geology, specifically Paleozoic geology associated with water, energy, critical minerals, and carbon sequestration. This geologist will work on existing grants, write new grants, and supervise students and junior staff. This position will support a continuing understanding of the Michigan Basin which will sustain a number of active and proposed grants and research proposals to have a greater understanding of the subsurface geology.

This position will have the following responsibilities.

- Conduct geological research in energy, water, carbon sequestration and critical minerals.
- Write reports and prepare publications
- Complete and apply for grants.
- Mentor staff, students and contractors
- Participate in outreach, education and engagement activities.

The position requires a Masters and at least 5 years' experience in rock, sample, and core descriptions, experience working in carbon sequestration, field work, working in critical minerals, in writing technical reports, publications, presentations and working with mapping software or other geoscience software.

Salary commensurate with experience.

## Senior Research Associate – Geologist Aggregates Project

<https://www.wmujobs.org/postings/1944>

Senior Geologist that will design, administer and coordinate all work as the Project Manager (PM) to implement research related to Michigan and adjacent state geology and geomorphology associated with aggregate resources, water, energy, critical minerals, and carbon sequestration. Works on existing grants, writes new grants, and supervise Research Associates, Geoscience Specialists, students, and temporary staff. This is a five year grant to map Michigan Aggregates.

- Designs, administers (PM) and implements research projects associated with aggregate mapping and data compilation, a project plan.
- Collects data in accordance with ethical and technical principles.
- Selects and applies appropriate quantitative, statistical, and/or qualitative methods for analysis and interpretation of data.
- Writes manuscripts for submission to professional and/or scientific journals or reports to the sponsoring agency.
- Collaborates with researchers, scholars and other stakeholders as relevant to the project.
- Identifies new or prospective sponsors and funding opportunities and drafts proposals for new/renewed research funding.
- Monitors daily operation of research programs/projects, including the reporting requirements, budgets and timetables specified in the project.
- Leads discrete components of a larger project under the general direction of a principal researcher.
- Ensures that research projects comply with scientific and ethical requirements.
- May contribute to applications for external funding as a co-principal investigator.
- May serve as a principal investigator on a funded research or scholarship project or as a co-investigator under the general direction of a principal investigator.
- May present at professional conferences and meetings in the relevant field.
- May hire and supervise staff and students working on grant-related projects.

The position requires a **Masters and at least 5 years' experience** in rock, sample, and core descriptions, experience working in carbon sequestration, field work, working in critical minerals, in writing technical reports, publications, presentations and working with mapping software or other geoscience software.

Hiring link:

<https://www.wmujobs.org/postings/1944>

Salary commensurate with experience.

<https://www.mbgs.org>

MGS must have two separate postings to hire at least two staff for the same position. No need to apply to both Research Associate postings.

**Research Associate – Geologist with GIS experience** <https://www.wmujobs.org/postings/1948>

Field and data geologist to provide geologic and GIS field and office research support for existing grants, assists with preparation of proposals to acquire new grants, and assist with publication of grant-related products associated with **geologic mapping of aggregates** and other surficial geology. Duties include conducting field sampling, mapping, and data compilation for geological characterizations and modeling of geological strata associated with aggregates. Responsible for creating and maintaining data collected and input to GIS and other databases for projects, maps, collections and inventories, and for making these available electronically. Supervises and mentors student workers.

- Implements research projects as specified in the aggregate project plan.
- Collects data in accordance with ethical and technical principles using field, remote sensing or geophysical methods.
- Applies appropriate quantitative, statistical, and/or qualitative methods for analysis and interpretation of data.
- Drafts or writes manuscripts for submission to professional and/or scientific journals or reports to the sponsoring agency.
- Collaborates with researchers, scholars and other stakeholders as relevant to the project.
- May contribute to applications for external funding as a co-principal investigator.
- May present at professional conferences and meetings in the relevant field.
- May have lead responsibility for discrete components of a larger project under the general direction of a senior or principal investigator.

This position requires a minimum of **Master's (or equivalent) degree, plus at least 3 years'** relevant experience. In rare instances, a Bachelor's (or equivalent) degree, plus at least 8 years' relevant experience.

**Research Associate – Geologist with GIS experience** <https://www.wmujobs.org/postings/1945>

Field and data geologist to provide geologic and GIS field and office research support for existing grants, assists with preparation of proposals to acquire new grants, and assist with publication of grant-related products associated with **geologic mapping of aggregates** and other surficial geology. Duties include conducting field sampling, mapping, and data compilation for geological characterizations and modeling of geological strata associated with aggregates. Responsible for creating and maintaining data collected and input to GIS and other databases for projects, maps, collections and inventories, and for making these available electronically. Supervises and mentors student workers.

- Implements research projects as specified in the aggregate project plan.
- Collects data in accordance with ethical and technical principles using field, remote sensing or geophysical methods.

<https://www.mbgs.org>

- Applies appropriate quantitative, statistical, and/or qualitative methods for analysis and interpretation of data.
- Drafts or writes manuscripts for submission to professional and/or scientific journals or reports to the sponsoring agency.
- Collaborates with researchers, scholars and other stakeholders as relevant to the project.
- May contribute to applications for external funding as a co-principal investigator.
- May present at professional conferences and meetings in the relevant field.
- May have lead responsibility for discrete components of a larger project under the general direction of a senior or principal investigator.

This position requires a minimum of **Master's (or equivalent) degree, plus at least 3 years'** relevant experience. In rare instances, a Bachelor's (or equivalent) degree, plus at least 8 years' relevant experience.

AIPG Michigan Section Announces the

13<sup>th</sup>

# Environmental Risk Management Workshop Data Driven Decision Making

June 11-12, 2024



## CALL FOR ABSTRACTS

The American Institute of Professional Geologists (AIPG) Michigan Section is delighted to invite you to submit abstracts for the 13th annual Environmental Risk Management Workshop at the [Ralph A. MacMullan Conference Center](#) in Roscommon, Michigan on June 11-12, 2024. This technical training event is designed to empower environmental professionals through practical applications and insightful case studies. Our unique platform brings together experts from consulting, regulatory, academic, and industry sectors, fostering collaboration and partnership to address intricate environmental challenges in a peer-to-peer learning format.

### Theme: Data Driven Decision Making

In 2024, we focus on the pivotal role of data in decision-making processes related to environmental contamination, public safety threats, remediation strategies, and site closures. High-quality data collection, rigorous quality assurance/quality control (QA/QC), and effective management of big data sets are imperative in today's digital age. As technology advances, we have more tools and resources at our disposal than ever before.

The 2024 workshop encourages discussions on innovations in data collection, interpretation, and management. We aim to explore strategic planning for data collection and evaluation, combining foundational knowledge with the latest innovations to tackle environmental issues with fresh perspectives.

We welcome abstract submissions with data as a primary focus and how it is used to make risk-based decisions in the following key areas:

- **Contaminant Characteristics:** chemistry, hydrogeochemical evaluations, phase transformation, co-mingling contaminant behaviors
- **Emerging Contaminants:** Per and poly-fluoroalkyl substances (PFAS), microplastics, pharmaceuticals, viruses
- **Tools for Evaluating Contaminant Fate and Transport:** Monitoring approaches, models, chemical analyses, unknown vs. known contaminants

- **Data Collection and Analysis:** data collection tools, groundwater modeling, calculation of the contaminant mass, documentation and CSM development, life cycle analysis and cost-to-closure solutions.
- **Geologic Conditions and Complex Environments:** geologic conditions influence movement, rate of contaminant migration based on soil type and lithology, retardation factors and influences, groundwater/surface water interface
- **Remediation:** Enhanced remedial approaches, measuring natural attenuation or source zone depletion, chemical and/or biological in-situ remediation
- **Closure:** Documentation to demonstrate risks are managed based on contaminant fate and transport, models, life cycle analysis and cost-to-closure solutions.

The Michigan Section is also calling for demonstration abstracts that can include outdoor demonstrations.

### Presentation Details:

Two-part abstracts are welcome for more in-depth presentations.

Presentations are allotted 30-40 minutes.

### Outdoor Demonstrations:

In addition to traditional case study abstracts, we are also inviting demonstration abstracts that may include outdoor practical demonstrations.

Join us at the 2024 AIPG Michigan Section Environmental Risk Management Workshop to share your expertise, network with industry leaders, and contribute to the advancement of the environmental science community.

### Abstract Submission Deadline: January 15, 2024

Abstract submissions shall be emailed by the due date to the workshop chair, Sara Pearson at [pearsons@michigan.gov](mailto:pearsons@michigan.gov).

For inquiries or further information, please contact Sara Pearson.

We look forward to your contributions and a successful event in 2024!

# Submittal Deadline: January 15, 2024

# AIPG Michigan Section Guidelines for Abstract Submittal

**Important:** The following guidelines provide details on the style and format of abstracts. The AIPG Michigan Section appreciates your interest and submittal of quality abstracts. Thank you.

Abstracts shall be no more than one page in length, and all text shall be 12-pt Times New Roman font with single spacing one-inch margins.

The abstract title shall be centered at the top of the page and be in bold 14-pt Times New Roman font. Directly below the title, list the presenter's names and organization(s) followed by the author's names.

**Writing style should NOT be in first person.** Rather, please use third person and the correct verb tense (e.g. present, future, past). The abstract should include the nature of the work and its relationship to the workshop theme and Environmental Risk Management, justification for the work, key/data findings and conclusions. Leave one blank line between paragraphs and other headings and text. Use right and left justification of all margins and do not indent paragraphs.

**Please do NOT indicate in the abstract that particular information will be discussed during the presentation.** The abstract should stand on its own merit and not point to the presentation that will be made at the workshop.

Please add a notation in the header of the abstract indicating topic category selecting from those listed in the text description on the front page of this flier.

## Information on Authors

**Please include the following:**

### **Names of Presenter(s):**

Last Name, First Name and Initial  
Place of Employment, Job Title  
Email address and Work/Mobile Phone Number(s)

If there are more than two presenters, please list the two key presenters first.

### **Names of Other Authors:**

(Please include the information below for all key authors. If there are more than four authors, add the additional authors on a separate page.)

### **Name of Author(s):**

Last Name, First Name and Initial  
Place of Employment, Job Title  
Email address and Work/Mobile Phone Number(s)

### **Presenter Biographies**

Additionally, please include a brief author biography for each presenter with the abstract submission on separate pages.

**Abstracts Due: January 15, 2024**  
**Selection Notification: February 29, 2024**  
Submit to [pearsons@michigan.gov](mailto:pearsons@michigan.gov)

Questions? Contact Chair: Sara Pearson ([pearsons@michigan.gov](mailto:pearsons@michigan.gov)) Thank you.

*Note: We are planning for this to be an in-person event. We are looking forward to hosting this event and hope to see you there!*





# MICHIGAN BASIN GEOLOGICAL SOCIETY

# INVOICE

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