

Upcoming Events:

2023 Annual March 18 Meeting 2023

Inside this issue:

Message From the President	I
2023 Annual Meeting	2-4
2023 Election	5-6
2023 FOP Meeting	7-8
Color Book Donation	8
2023 Hydric Soils	9
One Field Soil Scientist's Experience using MIR	10-13
For Sale	14
ISCA on Facebook	15

Illinois Soil Classifiers Association Newsletter

Winter-February 2023

Message from the President

Submitted by Liz Miernicki

I hope the beginning of 2023 is treating everyone well. I'd like to take this time to reflect on the various accomplishments and events that took place in 2022, because ISCA achieved a lot over the past year. I'm sure there are additional things I am not including, but here is a brief list:

ISCA gained a handful of new members!

We had a successful annual meeting in March and Fall meeting in October. The soil pits available to us at the Fall meeting sure stirred up some great conversation!

A few ISCA members assisted and/or supported the Region 3 Collegiate Soil Judging Competition which was hosted by the University of Illinois at Urbana-Champaign

ISCA financially supported Southern Illinois University's soil judging team which will help them partake in the upcoming NACTA soils competition in Modesto, CA this April

Members helped with FFA Land Use Competitions across the state by serving as coaches Lots of members participated in public outreach events across the state and represented ISCA Multiple soil texture kits were sold!

The Certification Exam guidelines were amended

We couldn't have had such a great year without the help of the Council, Committee Chairs, Certification Board, and everyone else who was involved. Thank you for the great work. There are plenty of things to look forward to in 2023. We'll kick off the beginning of Spring with the **Annual Meeting on March 18**th in **Champaign, IL**. This year's meeting will have a soil texture quiz you can partake in, so start calibrating your fingers now! Our guest speaker, Michael Flanagan, is the Regional Supervisor of the Illinois Department of Public Health and will provide a talk on septic system sizing using soil evaluations. Please be on the lookout for more information regarding the Annual Meeting. A save-the-date is further along in the newsletter. The membership will be notified once the registration info is available on our website. Also, don't forget about the **Hydric Soil Identification Course April 27-28, 2023**. For updates regarding this course, please visit our website.

I've thoroughly enjoyed my time as President, and I appreciate all of the help I have received over the past year. I'm excited to welcome Bob Oja as he takes over the position in 2023. See you in March at the Annual Meeting!

Liz Miernicki

48th ISCA Annual Meeting

March 18th, 2023 Illinois Natural History Building 1816 S. Oak St., Champaign, IL

Number Attending:	
Please register by March 15 th so that we can get a head count for lunch. Register	online at illinoi s

Name: _____

Please register by March 15th so that we can get a head count for lunch. Register online at illinoissoils.org. Registration can be found by clicking the Announcements bookmark. Each person attending must register using the form on the website.

This meeting will provide **PDH for **category C** – attendance or participation in seminars, tutorials, clinics, workshops, symposia, in-house courses, field tours/exercises, or technical presentations made at meetings, conventions, or conferences.**

Tentative Agenda				
Council Meeting	10:30am			
Registration	11:00am			
Opening Remarks	11:45am			
Invocation & Lunch	12:00pm			
Burt Ray Award	1:00pm			
Guest Speaker	1:05pm			
Business Meeting	2:30pm			

48th ISCA Annual Meeting

Michael Flanagan from the Illinois Dept. of Public Health is our speaker this year. Please see his bio and talk outline below.



Michael Flanagan has worked in public health for 19 years. He is currently the regional supervisor of region 6 of the Illinois Department of Public Health. He has worked and lived in Champaign County his entire career. In 2003, he received his Bachelor of Science in Biology from Eastern Illinois University. One of his core beliefs is that safe drinking water and proper sewer disposal is the foundation of modern civilization. This philosophy carries over to his free time when he reads and plays games designed around building civilizations. The focus of his career is ensuring that people without access to municipal water and sewer have safe private alternatives. During his many years of inspecting and approving private water and wastewater systems, he has seen the advantages of thorough soil evaluations for proper sizing and installation.

48th ISCA Annual Meeting

- I. Introduction
- A. Purpose of the presentation
- B. Overview of private septic systems in Illinois
- II. Soil Evaluations
- A. Explanation of what soil evaluations are
- B. Importance of soil evaluations in sizing private septic systems
- C. Factors considered in a soil evaluation
- III. Septic System Sizing
- A. How soil evaluations are used to determine the size of a private septic system
- B. Factors that affect septic system sizing
- C. Importance of proper septic system sizing
- IV. Illinois Regulations
- A. Overview of septic system regulations in Illinois
- B. How soil evaluations and septic system sizing fit into the regulatory framework
- C. Role of county health departments in septic system approvals
- V. Conclusion
- A. Summary of key points
- B. Importance of proper soil evaluations and septic system sizing in Illinois
- C. Additional resources for further information

2023 Candidates bios

President Elect

Alicia Metzger has been an active member of ISCA since 2010 and served as ISCA President in 2020. Alicia has also been an active member of the Newsletter Committee since 2015. Alicia currently works as the Project Soil Scientist on the Wetland Delineation team at V3 Companies in Woodridge, Illinois and is responsible for conducting all wetland delineations and wetland permits. Alicia has been a Certified Professional Soil Classifier with ISCA since 2018 and has assisted with planning numerous ISCA field trips and annual meetings. Alicia resides in Northern Illinois with her husband, three children, two dogs and hamster. In her downtime, she enjoys reading, hiking, exploring, traveling, live music, and being an involved member of ISCA.

Brandon Mueller graduated from the University of Wisconsin - Stevens Point in May 2019 with a Bachelor of Science degree in Soil & Land Management. Additionally, he minored in Wildlife Ecology & Damp; Management and completed his certification as a Wetland Professional in Training. While in college, he participated in several collegiate soil judging competitions which helped him come to the realization that he wanted to make a career out of classifying soils. Brandon is currently employed at William R. Kreznor & Damp; Associates, Inc. where he has spent the last four years working alongside his mentor and fellow ISCA member, Bill Kreznor, conducting on-site soils investigations for septic suitability, stormwater management, and wetland restoration. He recently became a Certified Professional Soil Classifier in June 2022, and he is currently serving as Vice President for ISCA. When he is not classifying soils, Brandon enjoys kayaking, biking, fishing, woodworking, and golfing.

Vice-President

Mary Beth Falsey is the Water Quality Supervisor for DuPage County Stormwater Management. She's been with DuPage County for nearly 20 years. In her current role she works on various aspects of stormwater quality including working on MS4 Permit requirements, developing Watershed-Based Plans, conducting spill response, and administering the DuPage County Water Quality Improvement Program Grant. Prior to entering the Water Quality role, she worked as a Wetland Specialist, conducting hydric soil investigations, performing wetland determinations & Determinations, and reviewing permits for development in wetlands and best management practices, as well as reviewing and inspecting sediment and erosion control. Mary Beth has a master's degree in Geography, specializing in Natural Environmental Systems and Soil Science, from Northern Illinois University. She is a Certified Floodplain Manager and Certified Professional in Sediment and Erosion Control. In her free time, she enjoys reading, going on nature walks, and spending time with her two cats.

Dalton Williamson grew up installing septic systems as part of a family business. Through this he met Jim Hornickel who took him under his wing and began teaching Dalton how to classify soils. Dalton went to the University of Illinois Urbana Champaign where he got his degree in Natural Resources with a concentration in Resource Conservation and Restoration Ecology. After graduating with his Bachelors in 2019 Dalton started working at the Illinois Natural History Survey as a Wetland Soil Scientist. While working at INHS Dalton got certified with ISCA and started doing on site soil evaluations for septics.

Treasurer

Bob Tegeler received a BS in Resource Management with a Soil Science Minor from the University of Wisconsin-Stevens Point, in 1976. He began working with the Soil Conservation Service(SCS)/Natural Resources Conservation Service(NRCS) in 1976 as a Soil Scientist, student trainee. In January 1977 Bob began working full time with SCS on the Champaign County soil survey, and over the years worked on numerous county soil surveys in Illinois. He was the Springfield MLRA Soil Survey Office Leader upon retirement from NRCS in 2019. In 2003, Bob started conducting soil investigations for septic systems on a part time basis, and he is continuing to do these types of soil investigations in central Illinois. Bob became a member of ISCA in 1977. Over the years he has held the office of Secretary 3 different times, Vice president once, and was a member of the Certification Board for a three year term, serving as Secretary-Treasurer for 2 years.

Galen Litwiller graduated from the University of Illinois in 1989 (Agronomy/Soils). He became ISCA certified in 2015 and has been doing on-site investigations in eastern Illinois from Kankakee to Effingham. He is also a Professional Soil Scientist in Indiana. Galen produces corn, soybeans, and hay on a family farm in northern Champaign County. He has served ISCA on the Certification Committee and the Public Relations and Education Committee. Galen and his wife of 30 years (Clair) are raising 6 kids and reside near Paxton. IL.

Ballot for 2023 ISCA Elections

Voting rights are for Full Members only. Please vote for one candidate for each office by placing an X next to the name. See the candidate biographies on the next page for more information about the candidates. Write-in candidates must have agreed prior to the election to run for that office.

President-Elect
Alicia Metzger
Brandon Mueller
Write-in candidate for President-Elect
Write-in candidates must have agreed to run for the office
Vice President
Dalton Williamson
Mary Beth Falsey
Write-in candidate for Vice President
Write-in candidates must have agreed to run for the office
Treasurer
Bob Tegeler
Galen Litwiller
Write-in candidate for Treasurer
Write-in candidates must have agreed to run for the office
Submit your ballot:
You may vote prior to the Annual Meeting in one of two ways: 1. Emailing your ballot to swiesbro@illinois.edu Place and the transfer of the swiesbro@illinois.edu
Please scan or photograph your ballot and return it as an attachment to an email with "Ballot" in the subject line. That way the ballot can be stored until virtually "opened" by the Nominations Committee without compromising your secrecyor-
2. Mailing your ballot to: Scott Wiesbrook

Please <u>seal your ballot</u> in a <u>separate</u> envelope and mark "Ballot" on the outside. Please put the ballot envelope in another envelope and mail with postage. Please be sure to <u>include your return address on the outer envelope</u>, so we know you are an eligible voter. Envelopes without a return address will not be counted. Who has voted will be recorded (to prevent voting more than once) and then the unopened, separately sealed ballots will be passed to the Nominations Committee at the Annual Meeting.

580 CR 1700E Philo, IL 61864

*****All ballots whether mailed or emailed must be received by March 17th, 2023 to be counted. *****

Save-the-Date for the 58th Midwest Friends of the Pleistocene Field Conference May 19 -21, 2023.

Tentative meeting title: The Glacial and Geomorphic Evolution of the Houghton Lake Basin.

This field conference will take place near Roscommon, in north-central Lower Michigan.

Registration will open for this conference in the coming weeks. Registration fees will include two nights of lodging at the RAM Center, most of your meals, refreshments, bonfire wood, and bus travel.

Conference Center: https://www.michigan.gov/dnr/
places/ram-center

Please contact **Randall Schaetzl** at <u>soils@msu.edu</u> to be added to the email listserv for the conference and for additional info.

58th Midwest Friends of the Pleistocene Field Conference

May 19-21, 2023

Introducing the 2023 Midwest Friends of the Pleistocene Field Conference in Central Michigan

Randall Schaetzl¹, B. Brandon Curry², Kenneth Lepper³, Catherine Yansa¹, Thomas Lowell⁴, Kevin Kincare⁵, and Christopher Baish¹

Abstract

Well-Research State (1997)

Abstract (1997)

Well-Research State (1997)

Abstract Case the second state of the second s vill end early Sunday afternoon, as is customary. Please send your email address to Randy chaetzi (soils@msu,edu) to ensure that you are on our mailing list.

Ralph A. MacMullen

Quality of scenic beauty along the drive

PURE / ICHIGAN

BACKGROUND

the Mackinac Lobe – a sublobe of the Laurentide Ice Sheet. The Mackinac Lobe advanced into the Basin along the flowline shown here, and by shortly after the LGM, had filled it. Data from gravels and cobbles in glacial sediment within and surrounding the Basin will be used to confirm the singular identity and flowpath of the Mackinac Lobe

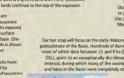


The FOP will focus on glacial, glaciolacustrine, and eolian landforms within the Houghton Lake Basin – a broad lowland bordered by glacial uplands. The Basin is drained today as in the past – by the Muskegon River. Two large lakes - Higgins and Houghton - occupy the center of the Basin. The Conference Center is on the north shore of

WHAT WE WILL SEE at the 2023 MIDWEST F.O.P.









LOGISTICAL STUFF

Your registration fee covers a Friday evening icebreaker and bonfire, all your meals (Saturday Br and Di [banquet], and Sunday Br), bus transportation, and two box lunches. Participants are encouraged to lodge at the RAM Center, in single- or double-occupancy dorm rooms. The food is very good at the Conference Center! The last stop on Sunday is expected to end at =1:30 pm. We are grateful to the NSF Geography and Spatial Science Program for partially underwriting the cost of the conference (award #1759528).

Looking for slightly worn Munsell Soil Color Books

Have you recently ordered a new Munsell color book? If so, and you don't mind parting with your old copy, please consider donating your extra book to ISCA so it can be distributed to collegiate soil judging teams in need. Please contact Liz Miernicki at miernic2@illinois.edu if you would like to donate or feel free to bring your extra book to the annual meeting on March 18th. Thank you!

2023 Hydric Soils Workshop



Illinois Soil Classifiers Association Hydric Soil Identification Course

2 Day Hydric Soil Course will Cover:

Introduction to hydric soil identification Soil formation, landscapes, and water flow Using the hydric soil indicators Disturbed and problem sites

Cost: \$200

Location: DuPage County Campus

field locations tbd You Can Earn: 10 PDHs

For updates visit: Illinoissoils.org



submitted by Matt McCauley, Owensboro, KY

Being able to generate laboratory data quickly has been a challenge for soil survey field offices since soil survey began. Sampling was encouraged but you couldn't be in a hurry to get analytical data. Midinfrared (MIR) spectroscopy has changed that. Just as you calibrate a pH meter to measure pH of unknown solutions, you can also calibrate an MIR spectrometer to estimate soil properties.

In 2019, I was asked by my Regional Director if I would like the Owensboro, KY soil survey office to have MIR technology. I had heard good reports from the Salina, Kansas office that had first piloted MIR. I said yes. The training was intense, with a steep learning curve. What became clear during the training was that, with the proper calibrations, MIR should be able to reliably estimate numerous important properties at the field office level.

The training focused largely on geographic area for building model calibrations. Early on, my mind was focusing on refining calibrations based on parent materials, at least for certain soil properties. Though my initial calibrations by geographic

area worked well, I imagined they might be improved by further stratifying them by parent materials.

I went to training with Dave Gehring, Resource Soil Scientist. Dave is colocated with me in Owensboro. Dave and I began to build calibrations after the training. Some of our calibrations appeared attractive, others not so much. Soon we had about 40 calibrations, half of which we were confident in after doing comparisons with conventionally measured data and from our tacit knowledge of the soils.

We refine calibrations until we reach a low enough error to provide valid predictions. Soil pH exemplified a calibration that wasn't initially offering a low enough error, and so we decided to build pH models for the high and low ranging soils. The calibrations improved in accuracy, improving in error from 1 down to 0.4 units.

submitted by Matt McCauley, Owensboro, KY



Figure 1 - A Bruker Alpha-II MIR spectrometer scanning a sample. The surface area is the same as the end of a pencil eraser; four subsamples are scanned per horizon.

Note: Mentioning the make and model of instrument does not imply USDA-NRCS-SPSD endorsement, nor should one be inferred

One calibration that particularly interested me was for base saturation. The southeastern portion of my survey area has alfisols and ultisols that are mixed where the loess is thin. Once loess gets thin (50 cm or so), the additional bases in the loess are usually not present in the quantity needed to recharge the

residuum from sandstone and shale above the 35% base saturation needed at the critical depth, so that these soils would classify as alfisols. Where loess is thicker these soils are typically alfisols (greater than 35% base saturation by sum of cations). The initial calibrations offered borderline performance statistics, so we were not sure what to expect with real test samples. We had sampled a field at the edge of our MLRA for a regional collegiate soils contest where the loess was thin, and it was over Limestone. Sandstone and Shale. We expected the loess over limestone to be an alfisol and the other soils to be ultisols. We scanned these samples and made predictions, and the calibration predicted as follows: for soil over limestone, the MIR estimate was 79% base saturation by sum of cations at the critical depth, while the actual data from the lab came back at 71%; for loess over sandstone, the MIR estimate was 23% base saturation by sum of cations, and the KSSL came back with 24%. Excellent! We expected the soil over shale to come back as an ultisol, and the MIR predicted 25% base saturation by sum of cations. We have a lot of experience in other parts of the area with this calibration predicting near expected results, and results that match the nearby legacy

submitted by Matt McCauley, Owensboro, KY

data. Our base saturation by NH₄OAc predictions have been equally as impressive.

Calibrations vary in quality (in terms of error), and total carbon is our best calibration. Clay and silt calibrations offered acceptably low errors also. This combination of the clay and silt models allows us to predict texture accurately. Regarding clay, my experience told me that building calibrations for clay needed to be done by parent materials. I built a loess clay calibration. Dave built a Kentucky clay calibration, and we built a high clay calibration as well for residual soils that are over 50% clay, lake beds and slack water alluvial soils. The Kentucky clay calibration is for residual soils mainly, but also alluvial or lacustrine soils that would fall between thirty to fifty percent clay. Dave developed a silt calibration for Kentucky, and I worked on loess silt calibrations. I used my knowledge and experience as a field soil scientist to identify spectral data based on properties of the parent material to create calibrations. MIR also worked well to estimate ECEC, CEC by sum of cations and NH₄OAc, Sum of Bases, Total Nitrogen, Extractable Acidity, 15 bar water, CaCl₂ pH and a few other properties. MIR does not work as well for Bulk Density, ESP, and Lead.

I have determined hundreds of textures using hydrometers over the years. When I went to training for the MIR, my trainer told me I might abandon conventional analysis once I got comfortable with the MIR and had good texture calibrations. I admit I doubted my texture calibrations would ever be that good. The trainer was correct. I am at a point with my texture calibrations that I trust the MIR texture determination.

Owensboro is participating in a joint DSP project in reclaimed mine soils in southern Indiana with the Union, Missouri office. Digging began on November 8, 2022, for this project, and by November 18, 2022, we had completed the data analysis for the MIR and had performed Bulk Density analysis through the lab. On November 29th and 30th, I sampled for two other projects. This data was analyzed by December 6th. MIR has really helped the turn-around time for getting good quality soil property estimates.

MIR calibrations are built on data from largely legacy soil samples, currently stored in the KSSL soil archive, collected by predecessor soil scientists who likely never imagined that their samples would be used for

submitted by Matt McCauley, Owensboro, KY

predictive modeling techniques like MIR. But it is the link between MIR scans and field sampling, performed decades ago in many instances, that fuels this approach for rapid estimation of soil properties. This link to past data is fundamental in building accurate calibrations.

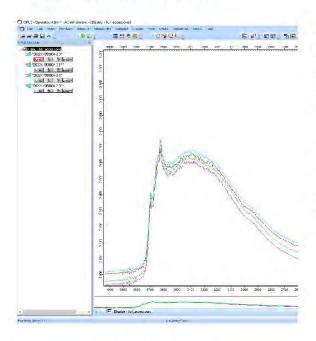


Figure 2 - Four MIR Scans of Bw horizon formed in alluvium derived from loess.

MIR has been proven here to be a very valuable tool for soil survey update work at Owensboro. The rules of science do not change with geography or MLRA boundaries. If it worked for this office, it should work for yours too. Good calibrations will afford you rapid, high-quality soil property estimates, and help improve

your understanding of soils in your region.

If your field office decides to incorporate MIR, I'd encourage you to use as much of your tacit knowledge about local soils to help refine your calibrations. I am convinced about the superior quality of calibrations built for the local areas, and you need to apply your soils knowledge to determine best ways to group soils for the best calibrations.

Please don't hesitate to contact me if you'd like to discuss this topic or compare notes with MIR efforts at your own office: happy to help!

For Sale

submitted by Brad Cate

Up for sale are 4 sets of double ring infiltrometers with constant head Marriotte reservoirs. The outer rings are 24" x ~18" and the inner rings are 12" x ~18". The reservoirs are 16" x 48" SCH 40 PVC and 10" x 48" SCH PVC, for the inner and outer rings, respectively. Used as Marriotte devices, they are set up at the approximate depth of the rings/infiltration surface. Volumetric flows are measured from exterior standpipes with 1/100 foot increments. An Excel spreadsheet will be included that converts reservoir measurements to in./hr. values. Applied head can be adjusted on the fly. Also shown is a float set up in which the devic-es simply act as reservoirs which eliminates the need to have the reservoirs in the pit. Included are (2) ~250 gallon water tanks, assorted hoses, and fittings, a custom hand truck, and oak driving timber. Once set up, one person can run 4 tests simultaneously. A 12v demand pump (12v battery included) provides pressure to refill the reservoirs as needed. The 16' trailer is not included but I would entertain offers. I would strongly recommend a demostration on set up/operation to an interested buyer. Call Brad Cate at (302) 856-1853 or contact via email @ bradcate@easternshoresoil.com

Price is \$2400.





www.illinoissoils.org

BUSINESS NAME

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Submissions

This is **YOUR** newsletter. If you wish to submit material, here are some preferences.

- Send information by the last week of the month before the newsletter is scheduled to be published.
- Digital copy in Microsoft
 Word
- Use as little formatting (indents, bullets, charts) as possible. This increases the work to get it into Publisher. It can be done, but increases work load for the committee.

The Newsletter Committee reserves the right to make edits/corrections deemed appropriate

Publication Schedule

- Winter (February)
- Spring (May)
- Summer (August)
- Fall (November)



The Illinois Soil Classifiers Association is an organization promoting the wise use of the soil resource. ISCA is made up of professional soil classifiers in public service, private industry, and education and includes students and others interested in preserving soil. A soil classifier maps, describes and interprets soils according to a national system of soil classification. ISCA was established in 1975 and is affiliated with the American Registry of Certified Professionals in Agronomy, Crops, and Soils.

ISCA on Facebook

For those of you who want to keep in touch with ISCA members and others interested in soils in Illinois, join our group on Facebook. Search Facebook for "Illinois Soil Classifiers Association" and become a friend of ISCA. Anyone may post messages, announcements, pictures or events that may be of interest to our membership. This is a great venue for posting meetings of other associations or organizations who use soil information. This is also a great place to post pictures of recent projects, interesting soils, or maybe something unrelated to soils, but of general interest to the membership. If you don't have a Facebook account, it is easy to set up. Just go to www.facebook.com and follow the instructions. Unfortunately, the Facebook site is restricted on some government computers, so many of you will need to do this at home. Contact webmaster@illinoissoils.org if you have any difficulty in accessing the ISCA Group or if you have any questions or comments.





ISCA Newsletter Committee is looking for pictures of its members, past or present, to include in future news-

<u>letters</u>. Submissions can be sent electronically or hard copy to the staff address, see above and left. Please include a narrative for the caption! If hard copies are sent please indicate, if they are to be returned otherwise photographs will be retained in an archive photos file.

www.illinoissoils.org

New, exciting links have been added to the "announcements" page on our website. Be sure to bookmark this page. Its an excellent resource to keep you informed on the latest soils issues.

Better yet... make it your home page!



ISCA Newsletter 89 Kings Highway Dover, DE, 19901

Visit the ISCA website to see the color version of this newsletter

www.illinoissoils.org/news

 Cut		Cut
	Change of Address Form	
Name:		
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Phone:		
E-Mail:		

*Mail to: Scott Wiesbrook, ISCA Secretary, 1816 S. Oak St., IL 61820