

PEDOLOGUE

- Winter (First 2018 issue) 2018

Newsletter of:
Mid-Atlantic Association of Professional Soil Scientists
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2017 MAPSS Officers – with brief description of some of their duties:

President: David Verdone -- Ex-officio on all committees except Nominations.
Past President: Robert Bricker - Chairperson of Nominations Committee
President Elect: Bruce Bagley -- To Develop Programs for his Presidential Year-2018
Vice President: Annie Rossi -- Chairperson of Membership and Ethics Committee
Treasurer: Sarah Roberts -- Ex-officio member of Finance Committee
Secretary: James Brewer -- Keeps accurate records of MAPSS membership etc.
Member at Large (1yr): Ben Marshall -- Helps organize and promotes Assoc. meetings
Member at Large (2yr): Nicci Coffie -- In Absence of secretary, record minutes etc.
Ex officio Member: Phil King (NRCS MD-DE State Soil Scientist) -- consultant to council.

Board of Directors: Board ensures the Council executes its duties, reviews actions of Council, meets with Executive Council at their board meetings etc.

Jim Chaconas to serve 1 year

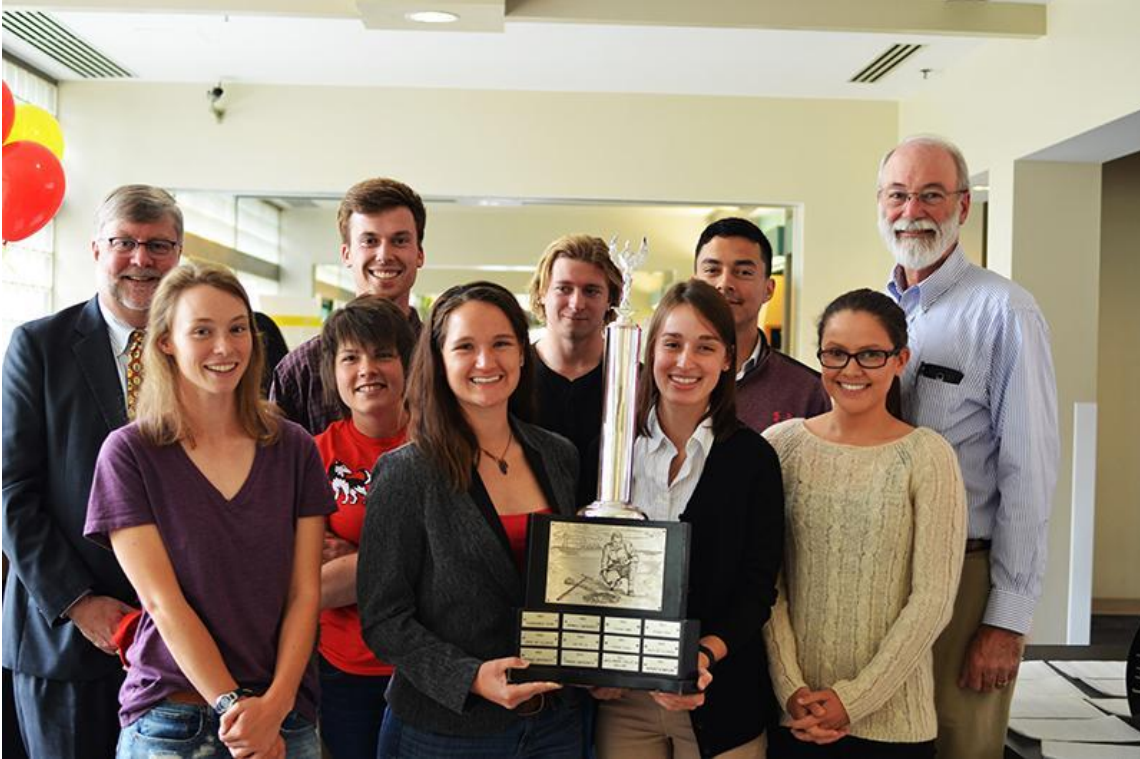
John Wah to serve 2 years

Barry Glotfelty to serve 3 years

In this issue:

- **Editor's Comments. Pages 2 and 3.**
- **Maryland Soil Judging Team Heading to Tennessee for 2018 Nationals, by Coach Brian Needelman. Page 4.**
- **2017 MD State Land Judging Contest, by Jim Brewer. Pages 5 & 6.**
- **MAPSS Executive Council Meeting, January 30, 2018. Minutes by Secretary Jim Brewer. Pages 6-8.**
- **Amoozemeter Data Versus Soil Morphological Estimated Permeability Rates by Carl Robinette, Phil King, Ben Marshall. Pages 8-10.**
- **MAPSS Facebook Development, by Ben Marshall. Page 10.**
- **Calendar of Coming Events. Pages 10-11.**
- **Call for future articles, etc. Page 11**

Editor's Comments: This is the first 2018 Pedologue issue. As a first order of business, I want to identify the individuals in the picture of some of the members of the UM soil judging team and their coaches of the 2017 National Contest championship team that were honored at the UM Department of Environmental Science and Technology Awards Luncheon and Convocation on Friday, May 12, 2017. I put this picture in my Editor's Comments section of the last issue of Pedologue (2nd issue of 2017) and I offered to pay the MAPSS membership fee for 2018 for the first individual who sent me the names, correctly spelled, for the 10 individuals shown in this picture -- team coaches were forbidden to participate, but team members were permitted. I am now again inserting the same picture and with the help of the team coach I here identify all of those in the picture.



Left to Right:

Front: Victoria (Tori) Monsaint-Queeney, Sara Mack (Asst. Coach), Natalie Agee, Kristi Persing (the No. 1 individual in the contest in Illinois, helping to hold the championship trophy), Shelley Porter

Back: Bill Bowerman, (Proud Chair of UM ENST

Department), (Cedric) Evan Park (MAPSS 2017 Simonson Scholarship awardee), Philip Schwartz (No. 1 individual in Fall 2017 Regional Contest in RI – see story later in this issue), Moises Umanzor, Martin Rabenhorst (team coach who, as a student in the UM Department of Agronomy, was on the first UM team to win a National Championship at Virginia Tech in 1972).

Since no one sent me the right id of those in this picture, nobody even responded, I am not having to pay any MAPSS membership fee for 2018, I get mine for free as an Honorary Member. However, I am disappointed that no one submitted an answer. I'm afraid it's showing that few people read the last Pedologue issue, which has been on the MAPSS web site for several months thanks to the good work of member Loretta Collins.

Since it is easy to do, by copying from Marty's story on the 2017 championship team that was in the last issue, I am inserting again on the next page the picture of the whole 2017 National Championship team.



In the picture above, the University of Maryland 2017 National Championship Soil Judging Team Left to right: Tori Monsaint-Queeney, Shelley Porter (9th Place Individual), Daniel Smith (11th Place Individual), Sara Mack (Asst. Coach), Philip Flint, Kristi Persing (1st Place Individual), Jesse Wyner, Natalie Agee, Chenglin Zhu, Martin Rabenhorst (Coach), Moises Umanzor, Alex Kramer, Philip Schwartz (5th Place Individual), Evan Park. This picture reproduced from story on this national championship team by Dr. Rabenhorst in the previous Pedologue issue.

UM will have the opportunity to repeat as national soil judging champions at the national contest, hosted this year by the University of Tennessee-Martin, after finishing 2nd in the Northeast Regional Contest last (2017) fall in Rhode Island, see story on succeeding page. To my understanding, Tennessee Martin is in Western TN where many of the soils are developed in loess. Maybe our UM team may be able to get some info on soils in Tennessee from Dr. John E. Foss, who after retiring from the University of Tennessee in Knoxville, where he was Chair of the Plant and Soil Science Department, is now residing in Easton, MD. I am in touch with John and am encouraging him to come to the MAPSS membership meeting. Many MAPSS members may remember John from the time when he was in the professorial ranks at UM in the Department of Agronomy, where he was coach for some years of the soil judging team. He was coach of the first UM team to win the Northeast Regional Contest, at Penn State in 1970, when Carl Robinette as a student was the No. 1 individual in the contest, and he coached the first UM team that won a National Championship in the contest at Virginia Tech in Spring 1972, when Cliff Stein was the No. 1 individual in that contest. John left UM to become a department chair at North Dakota State University in 1982 prior to taking his position at Tennessee in 1985. He is known for his work and many publications pertaining to soil archeological investigations.

Maryland Soil Judging Team Heading to Tennessee for 2018 Nationals, by Coach Brian Needelman.

The University of Maryland Soil Judging had a successful trip to the 2017 Northeast Regional Soil Judging contest, qualifying for the national competition by placing 2nd overall. Philip Schwartz won the individual portion of the competition, scoring a whopping 43 points over the 2nd place finisher. The team had five other finishers in the top 15: Victoria Monsaint-Queeney 10th, Philip Flint 12th, Moises Umanzor 13th, Evan Park 14th, and Cathy Wang 15th. Also on the team were Justin Derato, Dyani Frye, Rachael Heisey, Jonathan Wiechecki, and Jesse Wyner. Led by Derato, Frye, and Heisey, Maryland also took 2nd in the group judging competition. The contest was hosted by the University of Rhode Island, who also won the contest. Delaware Valley College took third, rounding out the contingent of Northeast teams heading to nationals, which will be hosted in the spring of 2018 by the University of Tennessee-Martin. The team enjoyed seeing a diverse array of soils found in the glaciated geology of Rhode Island, including cemented Spodosols, dense till, buried soils, wind-blown loess, and human-transported materials. The team was co-coached by Dr. Brian Needelman and Sara Mack from the Department of Environmental Science and Technology.



The 2017-18 University of Maryland Soil Judging Team. Left to right: (top) Moises Umanzor, Justin Derato, Jesse Wyner, Philip Flint, Evan Park, Brian Needelman (coach), Jonathan Wiechecki, and Philip Schwartz; (bottom) Rachael Heisey, Sara Mack (coach), Cathy Wang, Victoria Monsaint-Queeney, and Dyani Frye.

2017 Maryland State Land Judging Contest by Jim Brewer

On October 20, 2017, MAPSS along with NRCS and Maryland Cooperative Extension hosted the 2017 Maryland State Land Judging Contest for high school students. Since 2004 MAPSS has awarded cash prizes for individual 1st, 2nd, and 3rd place individuals.

Land judging is about learning to evaluate a soil for its best use through an examination of its properties. This introduction to soil science equips the students to make several basic evaluations of a soil and to make predictions concerning its behavior under various types of management and use. The winners are determined from two score cards (Land Judging and Home Site) which contain 15 questions on soil properties and 40 questions on agricultural and urban interpretations. The winning team will compete in the national contest that is held in Oklahoma in the spring. There is a practice period before the contest where the students can fill out a score card which is then reviewed by the officiating soil scientists. During this time the students have the opportunity to ask questions about the practice soil profile and soils in general.

The contest was held on a 210 acre farm in Queen Anne's County. The farm is owned by Tommy and Jeannie Bramble and their two sons, who provided refreshments and great hospitality for all. It was a beautiful Friday, when 37 students from 7 Maryland high school FFA teams competed; judging 3 soil pits which expressed various soil properties of the coastal plain geographic area of Maryland. The complexity of the soils even had the official judges scratching they're "collective" heads.

This year's FFA Team Awards went to:

1st Place – Catoctin Chapter

2nd Place – Walkersville Chapter

3rd Place –North Harford Chapter

4th Place –Hancock Chapter

5th Place – Francis Scott Key Chapter

MAPSS presented individual monetary awards to:

1st Place (\$100.00) – Jimmy Kempisty, Catoctin

2nd Place (\$75.00) – Kallen Latham, Catoctin

3rd Place (\$50.00) – Abby Kinnaird, Catoctin

For a picture of these individuals with MAPSS Member Carl Robinette, see the next page.

MAPSS would like to thank members Phil King, Diane Shields, Jim Brewer, and Carl Robinette for organizing and putting the contest on.



Left to right: The winners of the MAPSS Awards: Abby Kinnaird, Kallen Latham, Jimmy Kempisty, and Carl Robinette who presented the awards for MAPSS.

MAPSS Executive Council Meeting, January 30, 2018, Howard County SCD Conference Room, Minutes by Secretary Jim Brewer.

Attendees: Bricker, King, Glotfelty, Verdone, Rossi, Brewer, Marshall, Wah, Bagley, Chaconas.

Called to order by President David Verdone, 10:10 am.

- 2017 executive council meeting minutes reviewed Motion for approval, seconded, approved
- Old Business**
- General discussion: Map of open soil pits in state for use in training activities (Marshall has created a map in Google), need to add contact information for permissions and more known pits in state. Maybe also include pits in DE.
 - Brewer: Minutes from 2017 Business meeting read.

- Glotfelty discussed T-shirt sales; suggestion to put on web site; will bring to business meeting; could make them “event” specific if needed; could have soil profile in colors. Gave \$80 check to Brewer for last year sales.
- Bricker reviewed workshop held at BARC last year.
- Brewer reviewed past membership surveys for input to future workshops.
- General discussion on possible improvements and additions to web page; possible need for a web committee.
- Marshall and Rossi: discussion on MAPSS getting in social media (Facebook, Instagram, but not Twitter); would need two people to admin; maybe Marshall and new member Jenwei Tsai.
- Discussion on past dues: Brewer read notice that will be sent out after Business meeting stating you will be dropped from roles if dues aren’t paid according to By-Laws.

New Business

- King – 2018 National Collegiate Soil Judging Contest to be hosted by Tenn. Martin Univ. is asking for volunteers to help. The soil scientist who is in charge is undergoing medical treatment and can’t take lead on the contest. They need people to help on all parts of the contest. Motion was made for MAPSS to sponsor a volunteer, up to \$1000, to assist at contest. Seconded and approved. Bricker discussed asking volunteers on the MAPSS website. **King will look further into the situation.**
- Discussion on member Steve Krieg doing a presentation on lime disease at the annual membership meeting (important subject for soil scientists working in the field), if he can’t someone ELSE would present on that subject. This led to discussion on Health and Safety issues with soil scientists in the field and also discussion of biosecurity with Verdone introducing Bog Turtle study in MD. Possibly have DNR personnel give a presentation at membership meeting.
- Bagley mentioned possible presentation on restoration sites in DE.
- Marshall volunteered to provide update on MLRA Soil Survey if time allowed.
- King and Bagley – discussion on fundraisers for 2018: possible wetland or waste water training needed. Maybe do one on Eastern Shore (been a while), something not just for soil scientists. Storm water management, waste water, training for young engineers, sanitarians and other staff members who need CEU’s. **King and Bagley will work on it for fall workshop.**
- Bagley discussion on a need for engineering type of hydric soil training on shore. Rossi stated an Interagency training is in Ann Arundel next week. King stated need for that type of training on consultant side.
- Bagley further discussion on SWM (Storm Water Management) and WW (Waste Water) training this Fall: hope for 50 participates (\$100 for MAPSS members, \$250 for non-members); get Stein in on discussions of getting CEU’s; then in 2019 do a big hydric soils/wetland training 2 days, do all criteria not just hydric soils.
- Wah discussion: big ones are good to raise funds but can be difficult; little ones easier (one dayers).
- Bricker, Wah, and Glotfelty discussion on doing one day workshops on local geology and soils possible archaeology training or informational - member survey results should be kept in mind.
- **King** discussion on a one-day training with GPR unit NRCS recently bought. Training would be with retired soil scientist Dr. Jim Doolittle. Looking at the geophysical approach (archaeology), **Bagley** has grave site to look at, could do it in early summer with a crab feast. (\$40 members, \$80 others).
- Rossi discussion on expanding membership to more than pedologists; need to reach out to other departments and environmental disciplines.
- **Brewer** will call Legion about holding meeting on March 7 or 8 with same dinner as previous years..

Reviewed Treasurers Report and Budget

- Brewer –reviewed Roberts report and budget for 2017 and 2018; made estimates for unknowns for 2018. Tabled approval for budget at annual business meeting.

Executive Council and Board of Director Nominations for elections at Membership Meeting

- VP – Susan Lamb
- Secr. – Jenwei Tsai
- MAL (Member at Large) (1 yr) Ben Marshall
- MAL (2 yr) Josh Stallings
- BOD – James Chaconas, if no one else
- Brewer – sent out request to members for additional nominations including themselves.

Adjourned at 12:38pm

Amoozometer Data Versus Soil Morphological Estimated Permeability Rates by Carl Robinette, Phil King, Ben Marshall

Results of this investigation are provided as a possible reference point or benchmark for estimating permeability flow rates from soil morphological descriptions. Many of us spend 90+ percent of our time making estimates of soil performance from observable soil properties in the field. It is very satisfying to get quantifiable data to help confirm the paradigms we use in making interpretations and to further enhance our reference points.

This investigation arose from a request by Allegany County Department of Planning engineers, for an on-site soil morphological evaluation of a proposed storm water management Bio-Retention swale. Basically, they wanted confirmation of the mapped soil, fragipan, seasonal water table and permeability rates of soil horizons and substratum layers. The bio-retention swale is needed to treat the initial 0.25 inches of storm runoff from proposed US-220 acceleration/deceleration lanes to the Cumberland Chase subdivision at Pinto, Maryland in Allegany County. The site is located in a map unit of MnB – Monongahela silt loam, 3 – 8 percent slopes. Monongahela soils are moderately well drained, have a fragipan and perched water table. They are fine-loamy Aquic Fragiudults formed in old alluvium on terraces along the Potomac River.

On 12/19/17 two backhoe pits were described on the west side of US-220 about 30 feet from existing roadway and about 400 feet apart. Aside from pit #1 having an overlying layer of old fill (Ap 0 – 8”, C 8 – 24”), believed to be ~70 years old, both pits had similar morphological characteristics as indicated in the description for pit #2. Both profiles had redox concentrations and depletions within 20 inches of surface implying a seasonal perched high water table and a somewhat poorly drained classification. The 21 – 36 inch zone was designated a Bx (fragipan) due to prominent vertical polygonal veins, structure, very firm consistence and lower moisture state versus overlying layers, while technically it lacked brittleness and vesicular pores. Some lateral free water seepage was noted at the pit bottom. While mapped Monongahela, morphologically, these profiles are best represented by the Tyler (Aeric Fragiaquults) series which occurs on the same landscape but are considered somewhat poorly drained. I (Carl) believe this pedon actually classifies as Aquic Fragiudults, and is close to fine-silty.

Based on bio-retention basin or swale specifications this site is unsuited due to a seasonal perched water table and estimated permeability less than 0.5 in/hr. in the treatment zone. However, they are still being installed in this area utilizing remediation consisting of an underdrain or increased reservoir holding capacity versus areas of impervious surface being served. Potential for extremely high remedial measure costs in this case prompted

further consideration of use of the 36 – 67 inch zone for infiltration. Consequently, we decided that some



Amoozemeter testing may be prudent to reinforce or substantiate morphological based estimates. With the assistance of Phil King and Ben Marshal on 1/31/18, 3 amoozemeter sites or replicates were run at the one-meter depth about 10 feet south of soil pit #2. Augured spoil material had colors and texture similar to the earlier pit description. Specific parameters of the test and resulting flow rates are provided in attached data sheets. It was surmised that K sat ranged from (site 2) 0.0143 um/sec to (site 3) 0.0818 um/sec or about 0.02 in/hr. to 0.016 in/hr. or very slow. It was noted that water at site 1 did not move but did pick up the



weather change when we went from overcast to sunny when the high pressure moved in. Unit #1 data can be thought of in two ways. Either it worked and the soils are totally impermeable or it didn't because there was no movement. As Phil put it in perspective – "I have never seen a mod to mod rapid soil never move any water. You would expect that. So when you get the really slow stuff – and the unit is not bubbling – you figure something is wrong. " May be nothing is wrong – it just won't move water. Also, we must consider the seasonal high water table which eventually raised in this hole by 30 cm. What this

exactly did is still a guess. I assume, in these heavy soils it caused them to give us a slower K sat than one would expect. How much I don't know. If we assume a 10% slowdown in K sat we still have soils that are slowly permeable."

The take home message is that based on morphology, I was a little too liberal with my BC horizon permeability rate of 0.2 – 0.6 in/hr. These clay loam textures with 33+ % clay, platy structure and firm consistence should be estimated in the very slow category (0.0015 – 0.06 in/hr.).

Our first picture (previous page) shows Phil King (left) and Carl Robinette (right) working to conduct the tests. The second picture shows 3 separate Amoozemeters running simultaneously = 3 replications. We are actually measuring sat. hydraulic conductivity with a constant 6" head.

Editor's Comment: This article mentions attached data sheets and a soil description for Pit 2. Carl supplied these to me, but I have decided not to put them in the article here as they are quite long and the description, although well done on field sheet using standard abbreviations for properties, would not reproduce well. If a reader is interested to have these items, one should be able to get them from Carl or I can send you the 4-page attachment with them that Carl sent to me. I greatly appreciate getting this article for this issue of Pedologue.

MAPSS Facebook Development, by Ben Marshall.

Facebook has been around for a while now, actually, since 2004. As of Dec. 2016, Facebook had 1,860 million users. (source Wikipedia). We in MAPSS have recently joined Facebook as the Mid Atlantic Professional Soil Scientists page. So, what does that exactly mean? Well, it's the ability to share meeting dates, photos, videos, messages, and other questions and comments effortlessly. A member can post to the page, for free, from their home computer or even out in the field on a smartphone and share an interesting soil profile for all of MAPSS to see. I like the idea of being able to ask a question for the group for everybody to see to generate some interest and hopefully get a question answered. For example, where does this loess layer start and stop (based off a photo)

Another interesting feature, is to be able to communicate across different countries and translate languages within Facebook itself. I know it sounds far-fetched, but somebody from Australia may be interested in soils from the Mid Atlantic and be able to browse the Facebook page to learn more.

<https://www.facebook.com/groups/205272116717395/>

Ben Marshall – Frederick NRCS Soil Survey Leader

92 Thomas Johnson Dr.

Frederick, MD 21702

301-732-8584 (new phone number as of Jan2017)

Editor's Comment: I learned from following some of the MAPSS e-mail dialogue pertaining to the recent Executive Council meeting about the interest in a MAPSS Facebook page. I asked Ben Marshall if he would write me a blurb for Pedologue about this and he sent me the above statements in an e-mail message, which I have slightly edited and inserted into this Pedologue issue.

Calendar of some coming events:

Feb. 23, 2018. Film showing, discussion. Between Earth and Sky. Hoff Theater, Stamp Student Union, University of Maryland, 5-8 pm, Discussion with Director David Weindorf, B. L. Allen Pedology Professor from Texas Tech University following the film.

Wednesday Night, Mar. 7, 2018, 4-8 pm. MAPSS Annual Membership Meeting, American Legion Hall, Crownsville, MD.

June 3-7, 2018. American Society of Mining and Reclamation, National Meeting, St. Louis, MO.

June 11-14, 2018. Clay Minerals Society Annual Meeting, Champaign, IL.

August 12-17, 2018. International Union of Soil Science, IUSS, conference, Rio de Janeiro, Brazil.
<https://www.21wcss.org/> . There will be a meeting of the International Acid Sulfate Soils Working Group at this conference in part to plan for the 9th IASSC in 2020.

Nov. 4-7, 2018. ASA/CSSA (American Society of Agronomy/Crops Science Society of America Annual Meeting, Baltimore, MD. <https://www.acsmeetings.org/>

Jan. 6-9, 2019. SSSA (Soil Science Society of America) International Meeting, jointly with Canadian and Mexican Societies, San Diego, CA.

Future articles etc. Pedologue needs articles, pictures, poems, cartoons, letters to the editor or other things soil scientists and/or other readers of Pedologue may be inspired to submit. Please submit such items to the editor, preferably to DelvinDel@aol.com , alternatively to dsf@umd.edu . Be an author, support your newsletter, it's a way to promote yourself and your work and things we all need to know about soils and the environment.