



Association of Ohio Pedologists

Ohio's Professional Soil Scientists

VOLUME 45 ISSUE 2

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President's Message

“Fred Miller and the Ecological Paradigm”

This issue of the AOP Newsletter contains important details about the annual summer workshop. Our President-elect, Duane Wood, has been working with Dr. Steve Culman (OSU/OARDC) to organize a program that offers something for everyone. In a nutshell, they have developed an agenda that will give us an update on the latest quantitative measures of soil health. In addition, we will have an opportunity to examine how pipeline construction and soil replacement have affected soil morphology and

some related chemical, biological and physical attributes important to soil function.

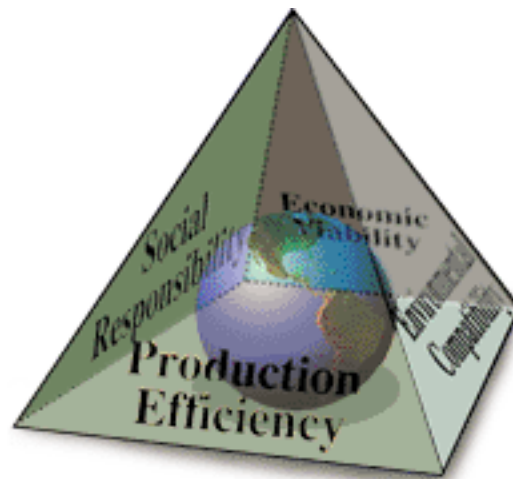
The workshop topic and venue cause me to reflect on the work of Dr. Fred Miller (1936-2011) and his career as a pedologist and academic. Fred completed a Ph.D. under the direction of Dr. Nick Holowaychuk in 1965 based on a study of the Canfield silt loam, a common Fragiudalf occurring on the northeast Ohio till plain (Miller et al. 1971 a and b). His study area was a short distance from our planned workshop site, and we will likely have an opportunity to review some of his research findings.

After completing his dissertation, Fred became Extension Land Use Specialist at the University of Maryland where he helped coach the soil judging team and authored Maryland Extension Bulletin 212, “Maryland Soils.” He was among the first to rigorously test the utility of soil surveys for non-agricultural uses and to argue nationally for a soil science “playing field” that is much broader than traditional agriculture. He spent 17 years on the Maryland faculty before entering administration as a department head at the University of Arkansas (1982 – 86) and ultimately returning to his *alma mater*, Ohio State, first as Chair of the Dept. of Agronomy (1986-94) and then as Director of the School of Natural Resources (1994-98). He also served as President of the Soil Science Society of America and became known and respected within his professional and academic communities as a leader and visionary.

Fred’s term as Director of SNR (now SENR) came at a time when many agricultural colleges, including the one at Ohio State, faced a mission crisis because of tensions and conflicts between established and non-traditional stakeholders.

Throughout its history, the land grant system has placed much of its teaching, research, and Extension emphasis on increasing agricultural productivity through technological advances that have directly enhanced plant and animal yields or enabled significant improvements in other efficiencies. Unfortunately, these advancements have sometimes resulted in unintended environmental and social consequences (think GMO's, competing land use, water supply and pollution, soil compaction/erosion, animal welfare, etc.). Even as a plentiful food supply and robust farm economy remain important land-grant priorities, consumers have increasingly demanded accountability in terms of food safety and nutritional value, the ethics of food production, and the impacts of production systems on the environment. Perhaps because of his ability to see and communicate a bigger picture, the college leadership asked Fred Miller to draft a unifying concept for the FAES in the 1990's. Although Fred would never take credit, his resulting white paper ultimately led to articulation of the so-called *Ecological Paradigm* that became the College's guiding principle for almost 20 years under Dean Bobby Moser.

In short, the *Ecological Paradigm* called for a responsible balance between production efficiency, economic viability, environmental compatibility, and social responsibility in agricultural systems. The model went beyond the mere recognition of possible competing forces and argued that meaningful consideration of the often delicate equilibrium between people, profit, and planet in decision making will almost always yield a much stronger final outcome. The visual representation of the *Paradigm* became a pyramid and, if you think about it, the Great Pyramid of Giza is the only wonder of the ancient world that is still standing – due to the strength and durability of its basic structure. *I might add that those of us in soil science were always happy to remind Dean Moser that the pyramid has a 5th side directly supported by the soil resource!*



As we gather for our summer workshop there will surely be opportunities to discuss the methods, motives, and consequences of work by various business entities that have criss-crossed Ohio with major pipelines in recent years and to speculate about whether their corporate mission statements include some type of *Ecological Paradigm*. While it may be tempting to point a finger at big business, we might also pause to consider our own standards. Many of us spent most or all of our professional careers protected (or perhaps constrained) by policies of our respective state and federal agencies. I wonder how those of us now making our way in the world of private enterprise manage to achieve **production efficiency** and maintain the **economic viability** of our businesses while assuring the

environmental compatibility and **social responsibility** of our recommendations to clients regarding how best to utilize the soil resource? I think Fred Miller would be happy to hear us having those discussions.

Respectfully,

Jerry Bigham

P.S. I have Fred's dissertation work and a few of his more practical articles and philosophical essays as pdf files if anyone desires some extra late-night reading. Those I have are listed below. Send me a note if interested.

Miller, F.P., N. Holowaychuk, and L.P. Wilding. 1971a. Canfield silt loam, a Fragiudalf: I. Macromorphological, physical, and chemical properties. Soil Sci. Soc. Am. Proc. 35: 319-324.

Miller, F.P., L.P. Wilding, and N. Holowaychuk. 1971b. Canfield silt loam, a Fragiudalf: II. Micromorphology, physical, and chemical properties. Soil Sci. Soc. Am. Proc. 35: 324-331.

Miller, F.P., J.E. Foss, and D.C. Wolf. 1981. Soil surveys: Their synthesis, confidence limits, and utilization for corrosion assessment of soil. pp. 3-23. In: Escalante, E. (ed.) Underground Corrosion, ASTM Publ. STP 741. Am. Soc. Test. Mater., Philadelphia, PA (Abst. only available).

Miller, F.P. 1983. Maryland's third generation soil surveys: An assessment of soil survey demands and product satisfaction. Soil Surv. Hor. pp. 3-11.

Miller, F.P. 1995. Forces driving changes in colleges of agriculture. J. Nat. Resour. Life Sci. Educ. 24:9-13.

Miller, F.P. and M.K. Wali. 1995. Soils, land use, and sustainable agriculture. Can. J. Soil Sci. 75:413-422.

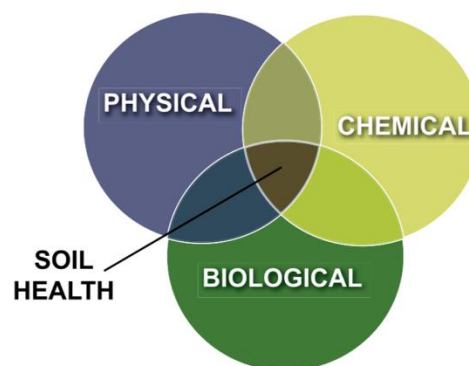
Miller, F.P. 2008. After 10,000 years of agriculture, whither agronomy? Agron. J. 100:1-13.

Association of Ohio Pedologists 2018 Summer Workshop What is Soil Health and how can it be measured?

The Association of Ohio Pedologists will host a workshop on Tuesday, August 7th, featuring Dr. Steve Culman, OSU Assistant Professor and State Specialist in Soil Fertility, entitled

"Quantitative Measures of Soil Health."

This workshop will provide an overview of soil health concepts and the current status of quantitative measurements of carbon and microbial activity, available nitrogen, and soil physical properties. Recent developments utilizing infrared spectroscopy will also be reviewed. Participants will have the opportunity to visit soil pits and view soil profiles inside and outside the Rover Energy Pipeline Right-of-Way, just completed in 2017. Soil morphological properties and their relevance to soil interpretations for various land uses will be discussed. In addition, soil samples from the pits will be used in hands-on demonstrations of soil health measurements at Dr. Culman's OARDC laboratory.



Soil Health deals with the integration of important soil physical, biological and chemical properties. Figure taken from a *Comprehensive Assessment of Soil Health - the Cornell Framework Soil* (2017), as adapted from the Rodale Institute.



Detailed Workshop Agenda and Schedule

Aerial view of Utopia pipeline near OARDC farms in Wayne Co., OH (Source: Google Earth/Earth Point Image dated 5/14/2017).

for August 7, 2018

Time	Topic	Presenter
8:00 - 9:00	Convene for coffee and donuts at 030 Skou Hall, ATI campus (see map below)	
9:00 - 9:45	Soil Health Overview: Framework and Current Status	Steve Culman
9:45 - 10:15	Measurements of Carbon and Microbial Activity	Jordon Wade
10:15 - 10:30	Measurements of Available Nitrogen	Steve Culman
10:30 - 10:45	Break	
10:45 - 11:00	Measurements of Soil Physical Properties	Vijay Chaganti
11:00 - 11:15	Quantifying Measurements with Infrared Spectroscopy	Leo Deiss
11:15-11:50	Soil Health Discussion	Steve Culman, others
12:00 - 12:45	Catered Lunch from Des Dutch Essenhaus in Skou Hall - Carmen Cafe	
12:45 - 1:00	Travel to Field Site	
1:00-3:00	Examination of Soil Profiles Inside and Outside of Rover Pipeline Right-of-Way	Jon Reedstrom, Steve Prebonick, Duane Wood, Wendell Swartzentrubber
3:00-3:15	Travel to Williams Hall, OARDC	
3:15-5:00	Hands-on Demonstrations of Soil Health Measurements	POXC Soil Protein Respiration Rainfall Simulator IR?

Quantitative Measures of Soil Health, AOP 2018 Summer Workshop
August 7th, 2018; 8:00-9:00 am start time, workshop end time is 5:00 pm
(6.5 CEU)

Agricultural Technical Institute

1328 Dover Rd, Wooster, OH 44691

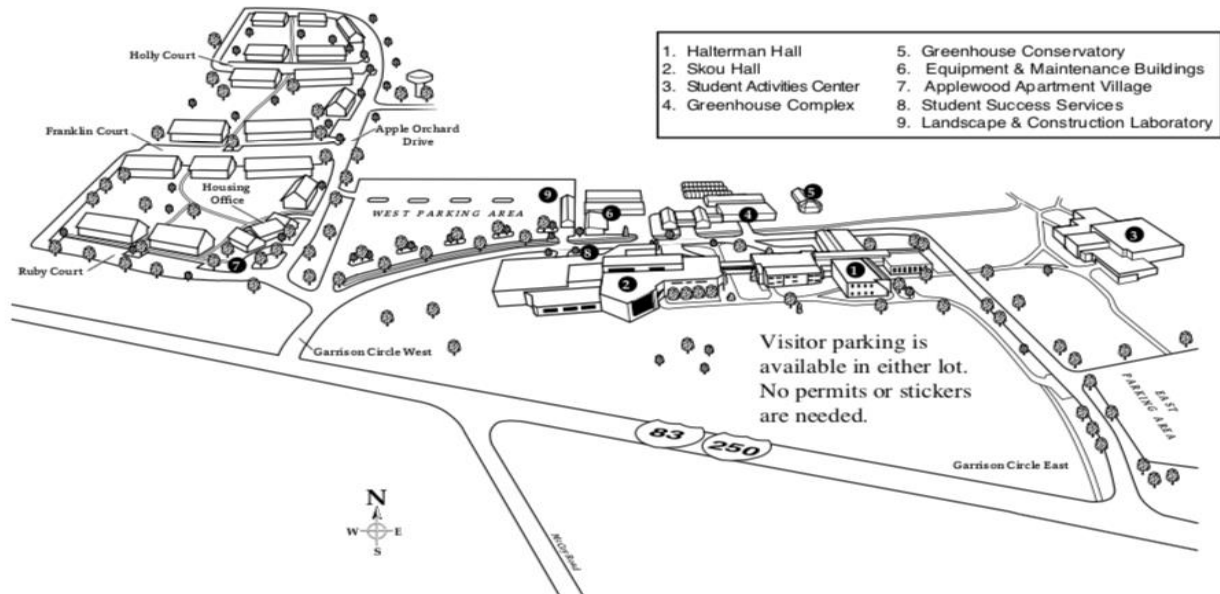
Skou Hall, Room 30 (Parking in West Parking Area Recommended)

Directions to OSU-ATI can be downloaded at:

https://ati.osu.edu/sites/ati/files/sitelibrary/site/mages/campus%20and%20GDDL%20map%20updated%201_17.pdf

Please register early, as participation is limited to 55 people. Lunch from Des Dutch Essenhaus is provided as part of registration as well as refreshments and a workshop manual from Cornell University, "Comprehensive Assessment of Soil Health.

Ohio State ATI Campus



**2018 Association of Ohio Pedologists Summer Workshop
Registration**

Space limited to 55 participants. Register early to guarantee a seat.

Registration ends when full or at 5:00 p.m., Friday, August 3.2018

Registration for Non-Students: \$50 (includes meal and refreshments)

Register and Pay by Personal Check Payable to AOP

Provide the following information:

Name: _____
Street Address _____
City, State, Zip Code _____
Email Address _____
Phone Number _____
Dietary Restrictions _____

Include check payable to AOP and send to:

Jon Gerken, Treasurer
5890 Rauch Rd.,
Carroll, OH 43112

Register and Pay by Credit Card (New, New, New):

Visit the Association of Ohio Pedologists Secure Website Store and Follow Directions

https://www.ohiopedologist.com/store/c1/Featured_Products.html.

Registration for Students: Free (includes meal and refreshments)

To register, please email Jon Gerken (jgerken47@gmail.com) your contact information and include the name of your advisor and academic program. Also indicate any special dietary needs.

2018 AOP Members

Angle, Michael
Balduff, Danielle
Baldwin, Kyle
Bauder, James
Benson, Kaitlyn
Bigham, Jerry
Buckingham, Gregory
Burns, Ray
Buzard, Rick
Cavanna, Barry
Cooley, Brian
Craig, Kevin
Deaton, Matthew
Demyan, Scott
Derringer, George
Fincham, James
Flowers, Mark
Gerber, Tim
Gerken, Jon
Gibbs, Frank
Glanville, Jeff
Griffin, Rick
Hall, George
Hamilton, Steve
Hanner, Melissa
Hattey, Jeff
Hemminger, Martin
Hendershot, Bob
Houser, Todd
Huffman, Keith
Kerr, Jim
King, Daniel
Lane, Matthew
Malmisur, Samuel
Mapes, Rex
Martin, Neil
McCleary, Floyd
McClure, Don
Michael, Dan
Miller, Steven
Milliron, Larry
Parkinson, Bob

Plunkett, Mike
Prebonick, Steve
Priest, Terry
Redmond, Doc
Reedstrom, Jon
Rice, Jeffrey
Ringler, Joseph
Ritchie, Bob
Rogers, Benjamin
Ross, Stephen
Rubel, Neil
Sams, Margaret
Sasowsky, Kathy
Scharf, Richard
Schumacher, Bill
Smeck, Neil
Steiger, Joe
Strain, Mitchel
Sullivan, Matthew
Tornes, Larry
Valerio, Mitchell
Weatherington-Rice, Julie
Wilson, Mark
Wood, Duane
Wright, Nathan
Zimmerman, Tom

WE NEED YOU



If you read this newsletter as a non-member and are a practicing or aspiring soil professional, please consider submitting an application to join AOP. We aren't perfect, but chances are good we will be better with your ideas and contributions. Membership applications can be downloaded at:

<https://www.ohiopedologist.com/membership.html>

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Calendar of Events:

- Certified Crop Adviser (CCA) Exams- Aug. 3 - various locations
-
- AOP Summer Workshop – Aug. 7 – ATI/OARDC, Wooster, OH
-
- World Congress of Soil Science - Aug. 12-17 - Rio de Janeiro, Brazil
-
- 2018 Ohio SCS/NRCS Retirees Luncheon - Aug 22 - MCL Cafeteria at 5240 East Main Street, in Whitehall, OH
- Earth Science Week “Earth as Inspiration” - Oct. 14-20 - various locations
-
- Connections Between Soil Health and Human Health Conf. - Oct. 16-17 – Silver Spring, MD
-
- SSSA Fall Certification Exam - Nov. 16 - various locationsSSSA Annual Meeting - Jan. 6-9, 2019 - San Diego, CA

If you know of an upcoming local, regional, national or international event that might be of interest to our members, please submit the name, date, location, and any available link to our Editor.

What’s in Your Wallet?

If you like, you can now forget the stamp and envelope when registering for AOP sponsored events. Submit your information and pay with a credit or debit card through the “store” located on our AOP website at:

https://www.ohiopedologist.com/store/c1/Featured_Products.html

Nominate a Deserving Individual for an AOP Award

Is there someone you think has done an outstanding job in service of our organization or profession? AOP sponsors a variety of awards for both members and non-members. Why not go the extra mile and submit a nomination(s) to a member of the Executive Council? Details and nomination forms are available at:

<https://www.ohiopedologist.com/awards.html>

Member Survey

Over the past several months, the Executive Council has been soliciting feedback from the membership via a simple, confidential survey. The goal is to better understand our professional demographics and interests. Responses have been received to date from 20 individuals representing about 30% of our membership, and the results have already been used by the EC to assist with program planning for the future. Please give us your input if you have not already done so. The survey will remain open until our summer workshop on August 7 and can be accessed directly through your web browser at:

<https://www.ohiopedologist.com/survey.html>

You can also find the survey through our AOP homepage by clicking and then hovering over the *Membership* heading on the top ribbon menu. Only three short responses (highlighted by an asterisk) are required to submit the survey, but the opportunity to give more detailed answers is also provided. Responses will eventually be summarized in the newsletter and/or posted through the web site.

Flashback

The 1985/86 Ohio State University Soils Team placed 3rd in the North Central Regional Contest and qualified for the National in Colorado. Team members included Matt Duncan, Jeff Glanville, Kurt Simon, Joy Tibbetts, Sandy Schroeder, and Becky Gibbs.



Land Degradation Threatens Millions According to First-Ever Land Health Report

Most climate science focuses on the atmosphere and the ocean, but a new report puts the health of Earth's land front and center – and the diagnosis isn't good. According to the first-ever land health report, produced by scientists with the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, or IPBES, some 75 percent of the planet's land areas are significantly degraded. The land's ill health threatens billions of people and the ecosystem services those people rely on (from the International Union of Soil Sciences: IUSS Alert 155 – May, 2018)

Read more: <https://www.upi.com/Land-degradation-threatens-millions-according-to-first-ever-land-health-report/8311522156604/>