

# Profiles



DEPARTMENT OF  
SOIL SCIENCE  
University of Wisconsin-Madison

DECEMBER 2016 VOL. 8 NO.1

## Message from the Department Chair



I have just returned from a meeting at the National Academy of Sciences that was held to celebrate World Soil Day. It is celebrated on 5th December and was first proposed in 2002. It is now celebrated across the globe and this year, there were over 200 global events and symposia.

The meeting in DC brought together about 100 people including soil scientists, policy makers, engineers, business folks, the editor of the *National Geographic*, and others from various state agencies. It was an eclectic mix bound by a common interest, as the theme of the day was "Soils: The Foundation of Life".

Dr. Jo Handelsman, the associate director for Science at the *White House Office of Science and Technology Policy*, provided a wonderful and detailed overview on the need for securing soils and soil science in the country. She noted an increase in the appreciation of soil at

various agencies but at the same time showed some trends that require action as well as new research. We are very fortunate that she will return to the UW campus next year.

Throughout the World Soil Day, the importance of soils in relation to climate change, water, health, food security, biodiversity, as well as cities and infrastructure was highlighted. We have technologies and sufficient know-how to solve some short-term problems, but are in need of advanced insights and pushing the boundaries of our knowledge. Questions were raised whether we train sufficient students and with the right skills to tackle the grand environmental issues that confront humanity.

Our department has a long tradition of contributing to the fundamental and more applied understanding of soils for wise and careful management of soil resources. We see that most of our soil classes are packed with students, and currently we have the largest number of MS and PhD students in many years. We work hard to increase the number of soil science majors and are also revamping the soil course catalog to prepare students for the new and exciting jobs that are awaiting after graduation. A highly rewarding part of our work is to see that students from our department promptly get jobs – many of them in the private sector.

The upsurge and renewed interest in soils and soil science at the national scale are yet to be matched by resources and new faculty hires in Madison. We are optimistic that our administrators are aware that the University of Wisconsin not only harbors the oldest Department of Soil Science in the US, but also the last one that solely focuses on the natural resource on which so much life depends: the soil! We shall continue to conduct first class soil research, train students in the best possible way, and stress the importance of soils for the well-being and welfare of people in Wisconsin, and across the world. Times are changing, but our mission and purpose remain unchanged.

We hope that you have a delightful holiday season, and best wishes from all of us in Soil Science in Madison.

**Alfred Hartemink**



World  
Soil Day

Isabelle Verbeke

ANTIGO SILT LOAM

Student Profile.....	2
Department News.....	2
Research Corner.....	2
Alumni Updates.....	2
Staff Profile.....	2
O.N. Allen Professorship.....	3
Graduates .....	3
Welcome.....	3
Supporters.....	4

## Student Profile: Hans Klopp

Hans Klopp is a PhD student working under Dr. Blead and Dr. Arriaga in the Department of Soil Science. He grew up in Lodi, Wisconsin as an avid outdoorsman who developed a strong interest in the environment and natural resources. Hans is very interested in the sport of fishing, specifically musky fishing, where he



makes his own baits. Interest in the importance of land and water resources led to him to pursue a Bachelor's degree in Water Resources with a minor in Soil Science at University of Wisconsin - Stevens Point. After completion of his Bachelor's degree, he decided to pursue a Master's Degree in Soil Science with an emphasis in Soil Physics at North Dakota State University. His thesis title was "Soil salinity and sodicity impacts on: Soil shrinkage, water movement and retention." Hans then decided to pursue a PhD in Soil Science, and an opportunity was available in Dr. Blead's Lab. Hans is researching how sodicity of irrigation waters changes soil's chemical and physical properties. His work will help to enhance the understanding of how soil chemistry changes the biomechanical properties of soil. Improving the understanding of mechanical properties of soils will determine how soil chemistry changes the water contents that a soil gains or loses under a given chemical composition.

## Department News

Three of our graduate students won awards recently at the ASA/CSSA/SSSA conference this past November. Congratulations to the following students on this accomplishment!

Elizabeth McNamee - First Place  
Model Applications in Field Research Community  
ASA Oral Competition

Melanie Stock - Second Place  
Soil Physics & Hydrology Division Student Competition  
5 min. Lightning Round Talk & Poster Session

Chris Bandura - Fifth Place  
Soil Fertility & Plant Nutrition/Nutrient Mgmt and Soil & Plant  
Analysis  
MS Poster Competition

## Research Corner: Sharon Long

The Long Research Group typically consists of students from Environmental Engineering, Biological Systems Engineering, Bacteriology, Nelson Institute and/or Soil Science in addition to staff, LTEs and special students employed through the State Lab of Hygiene. They split experimental work between the Hiram Smith Annex basement and the State Laboratory of Hygiene facility on the Eastside of Madison. These researchers study a diverse range of questions involving the movement of microorganisms throughout the environment and how to minimize the risk of human exposure to pathogenic microorganisms. One current project is focusing on public water systems served by groundwater wells, of which there are over 9400 in the State of Wisconsin. EPA does not require these systems to be treated, so monitoring the types of microorganisms and sources of those microorganisms helps assure proper wellhead protection or well remediation to protect public health. This project involves testing and applying new source tracking methods and integrating traditional monitoring and site inspection to understand more fully what is going on at a particular site. Another project is re-evaluating the time/temperature needed in anaerobic digestion processes to assure the microbial safety of biosolids products produced for beneficial reuse on agricultural lands.



## Alumni Updates

Thomas Deluca (BS, 1984) will become Dean of the College of Forestry & Conservation at the University of Montana as of January 2017.

John Pastor (MS, 1977; PhD, 1980) recently published a book of essays titled, *What Should a Clever Moose Eat? Natural History, Ecology, and the North Woods* (Island Press).

Robert Sasman (BS, 1948) will receive the American Water Works Assoc. "Water Industry Hall of Fame Award" at the Jan. 20 Award Meeting in Chicago, IL. He has been a member since 1957.

## Staff Profile: Troy Humphrey



Everyone who knows Troy would agree, if he were independently wealthy and did not have to work, he would focus on gardening every single day. Everybody in the Department of Soil Science who has ever had a conversation with him, or who has seen him bringing in bags of produce (usually jalapenos), would agree he already does focus on gardening every single day. Perhaps it is that love and his expertise in electronics that make him such a great Electronics Technician for the Department of Soil Science. He provides support to staff and students in designing and fabricating research apparatus and electronic equipment, assisting with the purchase of material and equipment, repairing and maintaining equipment, training staff, and coordinating outside sources when necessary. He enjoys helping students with technical support, problem solving, and even manual labor. Troy enjoys getting to know the students, watching their progress, and learning new things along with them. He has over 17 years of experience working with graduate students and electronics, and even more experience gardening. Being able to pair his work experience and his love of gardening through a department dedicated to soil has been a pleasure.



## O. N. Allen Professorship of Soil Microbiology

The Department elected Dr. Thea Whitman as the recipient of the O. N. Allen Professorship in Soil Microbiology in the Department of Soil Science. Thea has identified three research questions for her lab to focus on over the next five years under this funding opportunity.

1. How do the communities associated with each microhabitat change over time?
2. How do microhabitat conditions structure the microbial community?
3. How does the microbial community structure the microhabitat?

The lab will sample and track the development of microhabitats and their associated microbial communities (bacteria, archaea, and fungi) in a series of greenhouse and incubation trials. A portion of these funds will also be used to support a symposium in soil ecology and provide graduate student small-grant opportunities, in alternating years.

The funding for this award was made possible with gifts from the trusts of Ethel K. Allen as a permanent endowment memorializing her husband, Professor Oscar N. Allen, Bacteriologist.



## Recent Graduates

### UNDERGRADUATE DEGREES

Kruse, Jacob I. - BS, 2016 Soil Science

### GRADUATE DEGREES

Yost, Jenifer L. - MS, 2016 Soil Science

Soil carbon and soil moisture variation in cropped fields of the Central Sands in Wisconsin (RA, Hartemink)

Yuan, Mingwei. - PhD, 2016 Soil Science

Dynamic modeling of N balance in irrigated sweet corn and snap bean on sandy soils (RA, Bland and Ruark).

## Welcome

The department has numerous new graduate students and staff members to welcome:

**Michael Braus** (PhD, Whitman)

**Kalyn Diederich** (MS, Rurak)

**Isabel Foreman-Ortiz** (PhD, Pedersen)

**Ben Henke** (MS, Soldat)

**Amanda Jensen** (MS, Barak)

**Christina Kranz** (MS, Whitman)

**Ramona Lowery** (MS, Ventura)

**Sara Nason** (PhD, Pedersen)

**Toni Nelson** (MS, Ventura)

**David Nielsen-Franco** (PhD, Pedersen)

**Greg Richardson** (MS, Ruark)

**Donnie Vineyard** (PhD, Barak)

**Jenifer Yost** (PhD, Hartemink)

**Hannah Zeeb** (MS, Long)

**Yakun Zhang** (PhD, Hartemink)

**Yin Zhou** (PhD, Hartemink) (student from China)

**Andy Larson**, Senior Ag. Research Equipment Operator

**Jamie Woollet**, Assoc. Research Specialist, Whitman Lab

## Department of Soil Science at the University of Wisconsin-Madison

I/we wish to join other students/alumni, industry, and friends in enhancing the teaching, research, and outreach programs in the Department of Soil Science by contributing as indicated below.

\_\_\_\_\$50    \_\_\_\_\$100    \_\_\_\_\$250    \_\_\_\_\$500    \_\_\_\_\$1,000    \_\_\_\_Other

☐ Please charge my gift of \$\_\_\_\_\_ to my (please circle):    Mastercard    Visa    American Express

Card Number: \_\_\_\_\_

Expiration Date: \_\_\_\_\_

Cardholder's Name (please print): \_\_\_\_\_

Cardholder's Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Name: \_\_\_\_\_

Home Phone: \_\_\_\_\_

Work Phone: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_

State: \_\_\_\_\_

Zip: \_\_\_\_\_

If paying by check, please make your check payable to the UW Foundation-Department of Soil Science and mail to:  
University of Wisconsin Foundation • US Bank Lockbox • P.O. Box 78807 • Milwaukee, WI 53278-0807

Online donation is available on our website <http://soils.wisc.edu/alumni-friends/>

# Profiles

Department of Soil Science  
Julie Garvin, Editor

University of Wisconsin  
1525 Observatory Drive  
Madison, WI 53706-1207

Web site: [soils.wisc.edu](http://soils.wisc.edu)  
Email: [jgarvin2@wisc.edu](mailto:jgarvin2@wisc.edu)

Nonprofit Org.  
US POSTAGE  
PAID  
Madison, WI  
Permit No. 658

Printing/mailing paid for with  
UW Foundation/WALSAA/  
Department funds.

## Our Supporters

5/1/2016 to 11/30/2016

Dr. Arriaga  
Dr. & Mrs. Beaver  
Prof. & Mrs. Bland  
Prof. & Dr. Brown  
Campbell Scientific Inc.  
Dr. Chapman  
Mr. Crolius & Ms. Crolius  
D and D Trust  
Mr. Daniels  
Ms. Davidson  
Mr. Deluca & Ms. Deluca  
Mr. D'Huyvetter

Dow International Finance  
Fidelity Charitable Gift Fund  
Dr. & Mrs. Frazier  
Mr. & Mrs. Garvin  
Dr. Hadley  
\*in memory of O.J. Attoe  
Prof. & Mrs. Harris  
Mr. Hess  
Mr. Hole  
IBM Corporation  
Mr. Immega  
Prof. & Mrs. Keeney

Prof. & Mrs. Kelling  
Prof. Kirkham  
Mr. & Ms. Krueger  
Prof. & Mrs. Lowery  
Dr. Massey  
Michigan State University  
Dr. Milfred  
National Turfgrass Evaluation  
Program  
Northern Great Lakes Superin-  
tendent Assoc.  
Mr. Owens

Dr. Parker  
Dr. & Mrs. Petersen  
Pioneer Hi-Bred International  
Mr. Roof  
Ms. Rumery-Betz & Mr. Betz  
\*in honor of Dr. Bill Bland  
Mr. Sasman  
Dr. & Mrs. Sauer  
SePRO Corporation  
Mr. Shehadeh & Ms. Elshareif  
Prof. Emeritus Sommers  
Dr. M. K. Sommers

Mr. and Mrs. Stellato  
Prof. & Mrs. Stroehlein  
Prof. & Dr. Swan  
Ms. Tanner  
Mr. Timmons  
University of Minnesota  
Dean Emeritus Walsh & Ms.  
Boekhoff Walsh  
WI Agri-Business Assoc.  
WI Potato & Vegetable  
Growers Assoc.

## Alumni Update

**We'd love to hear from you!** Please complete and return this form  
or send your updates via email to: [jgarvin2@wisc.edu](mailto:jgarvin2@wisc.edu)

Name:

Degree(s) and Year(s): BS ( ) MS ( ) PhD ( )

Home Address:

Email:

Phone No.:

Position:

Employer:

News to share:

Return to:

Profiles

Department of Soil Science • University of Wisconsin-Madison  
1525 Observatory Drive • Madison WI 53706-1207