

Virginia Association of Professional Soil Scientists, Est. 1978

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## VAPSS Returns to State Fair

### September 28 – October 8,

**2006** -- The State Fair of Virginia is an event dedicated to the advancement of agriculture, education, youth and commerce in the Commonwealth of Virginia. The State Fair of Virginia Educational Exposition offers school tours for nearly 20,000 students and their teachers each fall. These tours offer 'hands on' learning experiences that feature Virginia's agriculture, history, technology and livestock.

The goal of the VAPSS exhibit is to inform the public about soils as a basic resource that we rely on for most of our food, fiber and local economy.

In the upcoming days, the VAPSS State Fair Committee will be personally contacting members to encourage support and participation in this important outreach event.

The State Fair operates from September 28 – October 8, open during the

hours of 10am – 10pm. The Committee will be seeking exhibit booth attendants for four-hour shifts (10am – 2pm, 2pm – 6pm, 6pm – 10pm).

VAPSS has been organized to promote the soil science profession. Our members set the very foundation by which this goal can be reached and we encourage your active involvement in this valuable opportunity.

## VT Soil Judging Team Places 2<sup>nd</sup>

The Virginia Tech Soil Judging Team finished second overall at the 2006 National Championship Contest hosted by Cal Poly San Luis Obispo on March 23-24. Virginia Tech finished second out of 21 qualifying teams, 19 points behind West Virginia University and ahead of the University of Georgia, the University of Illinois, and the Ohio State University. Virginia Tech placed first overall in last year's national contest.

Virginia Tech also received first place in the team-judging event, which involved more than 100

students. This is the first time that Virginia Tech has won the team event.

"The competition at this level is very strong, because all 21 teams had to qualify to reach this contest," said Coach John Galbraith, associate professor of soil science in the Department of Crop and Soil Environmental Science in the College of Agriculture and Life Sciences. "The soils, climate, vegetation, and geology were new to all of the teams that entered, so no team had a home advantage," he added.

According to Galbraith, "soil judging teaches students to go to unfamiliar places, study the resources, investigate the soil, hydrology, and land use, and then describe the soil horizons and properties. Students' answers are compared to those of official judges who are experienced soil scientists. Soil judging teaches the students to perform as individuals and to work together to make group decisions under stressful and time-constrained conditions." (continued on PG 2)

## Soil Judging Team, con't



1st Place Team Judging: Virginia Tech. Back row (L to R): Dylan Walker, Nick Haus, Coach John Galbraith, Joe Marshall. Front row: (L to R): Caroline Park, Lisa Moore, and Carlin Conk

*"We are very grateful to the Virginia Association of Professional Soil Scientists for their generosity in funding our travel on this trip. We know that many professionals donated their hard-earned money to help us travel on this expensive journey. We did our best to make their generous donations worthwhile."*

Virginia Tech also had two students place in the top-ten out of 84 competitors. Lisa Moore, a senior majoring in crop and soil environmental sciences from Christiansburg, Va., place seventh and Caroline Park, a senior majoring in environmental science from Richmond, Va. placed eighth.

"Soil judging is a unique opportunity to apply the information learned from my soils classes in a practical manner," Moore said. "Theory is nice, but we remember better the things we have seen with our own eyes and felt with our own hands. It is an opportunity to be tested as an individual scholar but also to be part of a team."

The other team members include Dylan Walker, a junior majoring in environmental science from Christiansburg, Va.; Carlin Conk, a senior

majoring in environmental science from Floyd, Va.; Nick Haus, a senior majoring in crop and soil environmental science from Rice Lake, Wis.; and Joe Marshall, a junior majoring in crop and soil environmental science from Louisa, Va.

Galbraith added, "We are very grateful to the Virginia Association of Professional Soil Scientists for their generosity in funding our travel on this trip. We know that many professionals donated their hard-earned money to help us travel on this expensive journey. We did our best to make their generous donations worthwhile. Next year's National Contest will be held in Logan, Utah, if we qualify at the Regional Contest. That should be possible, because we have four experienced judges coming back plus a new member who should do very well."

In addition to learning the soil, climate, geology, and vegetation of the Coastal Mountains of south central California, the students also drove to Las Vegas and had a special guided tour of the desert and Lake Mead from USDA-NRCS regional soil and environmental expert Doug Merkler. "The students observed everything from snow-covered mountains to the Central Valley vineyards and orchards to mountain grasslands and desert salt flats on this trip. It would be hard to imagine a more complete learning opportunity in one eight-day trip," said Galbraith.

Casey Marsteller, communications intern for the College of Agriculture and Life Sciences, prepared this news release.

# VAPSS Annual Fall Meeting Oct. 16 – 17, 2006

## **Fall Zone Geomorphology, Heavy Mineral Mining, and Prime Farmland Reclamation.**

The VAPSS Fall Meeting and Technical Session for 2006 will be held on Monday October 16 and Tuesday the 17th at the Old Hickory Firehouse and surrounding community in Dinwiddie County.

On Monday afternoon, the technical presentations will focus on Fall Zone soil geomorphology with an emphasis on recent discoveries of how extensive faulting through both the Upper Coastal Plain and Piedmont basement saprolites may have affected soil and landscape development processes. This geologic history of heavy mineral sands (ilmenite, rutile and zircon) deposition in the region will be discussed and related to the region's geomorphic history. Finally, the current mineral sands mining and reclamation technologies employed at Old Hickory will be detailed.

On Tuesday the 17th, from 9 am to 3:00 pm, we will tour the Old Hickory area observing a range of natural soils and associated geologic conditions. The tour will then review Iluka Resources' active mining operations, which are similar to those currently being proposed for Greensville County to the south. The field trip will conclude at Virginia Tech's Carraway-Winn mined land reclamation research farm where new protocols are being developed for return of mineral sands mines to prime farmland levels of productivity

Watch your mailbox for more information in the coming months. Please plan to attend.

## PEs Further Discuss GMP 125

*The Professional Engineers Section of the Virginia Board for Architects, Professional Engineers, Land Surveyors, Certified Interior Designers and Landscape Architects (APELSCIDLA Board) met on May 10, 2006.*

**DRAFT** minutes of further discussions related to the design of residential on-site sewage systems using pre-Engineered Components (GPM 125) are presented below:

Mike Lynn, President, Virginia Onsite Wastewater Recycling Association, was present to speak to the Section in regards to VOWRA White Paper on Design Authorities. Mr. Lynn went over the Abstract of the revised White Paper and was available for any questions the Section Members had on the topic.

Robert Mayer, PE, President of the American Manufacturing Company, was present to address

the White Paper on Design Authorities and stated that it speaks for itself. Mr. Mayer stated that his company manufactures septic systems that do not need to be designed by professional engineers.

Joel S. Pinnix, PE, was present to address the Section on his views of GMP #125. Mr. Pinnix stated again that he believes that the Department of Health has exceeded their legal authority in trying to define the role of professional engineers in the design of residential on-site septic systems. Mr. Pinnix provided the Section members with a handout of excerpts of the Code of Virginia that conflict with the Department of Health's regulations.

Richard Blackwell, III, PE, of Blackwell Engineering, was present and spoke to the Section to reiterate his past discussions with the Department of Health regarding the design of residential on-site septic systems. Mr. Blackwell noted that he has asked repeatedly that the Department of Health consult DPOR in this matter and they

have refused all requests.

The Section members accepted and reviewed the handouts they were provided with during the public comment period from Mr. Pinnix and the documents included in their agenda package. Mr. Courtney reminded the Section members that the issue before them was whether the provisions of GMP #125 allowed non-licensed individuals to practice engineering as defined in § 54.1-400 of the Code of Virginia. Mr. Harris summarized that it appears that Type I and Type II systems appear to be generally accepted by the Department of Health (VDH) as not needing the services of a professional engineer; however, it appears that VDH may have gone beyond what is permitted by allowing non-professional engineers to design residential on-site sewage systems using pre-engineered components or VDH approved components (see subsection B.10 of § 32.1-164 of the Code of Virginia) even though VDH has no formal procedures or regulations for the approval of such components. (continued on PG 4)

## VAPSS Website Under Construction

The VAPSS website ([www.vapss.org](http://www.vapss.org)) is currently under construction to redesign and improve the functionality of the site.

The website will be revamped to include up-to-date training opportunities, links to useful soil related

websites, VAPSS membership registration information, current job opportunities, and an interactive bulletin board.

The bulletin board will provide an electronic forum that hosts our posted messages and articles related to soil science and our

profession.

Please check back to [www.vapss.org](http://www.vapss.org) often to view changes and take advantage of the new website format.

We hope you will find the website and bulletin board to be a useful resource.

## 2006 VAPSS Membership Directory

The VAPSS Executive Secretary is currently compiling the 2006 VAPSS membership directory that will be distributed to all current VAPSS members.

The directory will provide business contact information or the contact information provided on your 2006 renewal form.

If you would like to

update your contact information or exclude information from the directory, please contact Sue Brown at 540-231-5741 or [suebrown@vt.edu](mailto:suebrown@vt.edu)

## PEs Further Discuss GPM 125 - con't

After discussion, Mr. De León made a motion that as GMP # 125 does not appear to comply with existing VDH regulations (VDH regulation 12 VAC 5-610-250.C contains a cap of 1000 GPD v. a cap of 1200 GPD contained in GMP #125; and § 32.1-163.5 of the Code of Virginia exempts pre-engineered sewage systems (treatment and

dispersal) while GMP #125 permits non-professional engineers to design sewage treatment systems and pre-engineered dispersal systems) and thereby allows non-professional engineers to design residential on-site sewage systems which should be designed by professional

engineers. Mr. De León further moved that the Board may wish to enter into a Memorandum of Understanding with VDH to assist them in the short-term to address the conflict and work with VDH to find a long-term solution to address the inconsistencies in VDH's regulatory program through the legislature in order to ensure that

non-professional engineers are not permitted to practice engineering. Mr. Harris seconded the motion, which was unanimously approved by members: De León and Harris. Mr. Johnson did not participate in the discussion or vote.

# Proposed Changes to Membership Criteria

VAPSS has been organized to promote the highest standards among soil science professionals. Our members set the very foundation by which this goal can be reached and we encourage active involvement by all members. Currently, only those holding a degree in soil science may be classified as "Regular" members, allowing the member to vote and hold office as outlined in the VAPSS Constitution. **In an effort to broaden the participation and leadership opportunities of our members, the VAPSS Executive Board proposes the following revisions to the Regular Membership Class:**

## ARTICLE II-MEMBERSHIP AND MEMBERSHIP PRIVILEGES

Section 1.0 The Association shall have five classes of membership as follows: (1) Regular (this class includes the Lifetime membership), (2) Student, (3) Honorary, (4) Affiliate and (5) Sustaining.

Sections 1.1 Membership classes are defined as follows:

- Regular: An applicant shall satisfy one of the following criteria in order to qualify for Regular Membership:
1. A person holding a baccalaureate degree with 30 semester hours or equivalent in biological, physical, and earth sciences with a minimum number of 15 semester hours in soil science and receiving approval by majority of the Board; or
  2. *A person who holds a current certificate as a Virginia Certified Professional Soil Scientist from the Board of Professional Soil Scientists in good standing and receives approval by majority of the Board; or*
  3. *A person who holds a baccalaureate degree in one of the natural sciences and has at least five years of experience in soil evaluation, and who receives approval by majority of the Board; or*
  4. *A person who has a record of at least eight years of experience in soil evaluation, and receives approval by majority of the Board; or*
  5. *A person who has at least four years of experience in soil science research or as a teacher of soil science curriculum in an accredited institution of higher education which offers an approved four-year program in soils and at least two years of soil evaluation experience, and receives approval by majority of the Board.*

*In an effort to broaden the participation and leadership opportunities of our members, the VAPSS Executive Board proposes the following revisions to the Regular Membership Class...*

## Soil Science Shorts

### **Coefficient of Linear Extensibility (COLE) – Soil Taxonomy 2nd Edition, 1999**

The coefficient of linear extensibility (COLE) is the ratio of the difference between the moist length and dry length of a clod to its dry length. It is  $(L_m - L_d)/L_d$ , where  $L_m$  is the length at 33 kPa tension and  $L_d$  is the length when dry. COLE can be

calculated from the differences in bulk density of the clod when moist and when dry. An estimate of COLE can be calculated in the field by measuring the distance between two pins in a clod of undisturbed soil at field capacity and again after the clod has dried. COLE does not apply if the shrinkage is irreversible.

### **Linear Extensibility (LE) – Soil Taxonomy 2nd Edition, 1999**

Linear extensibility (LE) helps to predict the potential of a soil to shrink and swell. The LE of a soil layer is the product of the thickness, in cm, multiplied by the COLE of the layer in question. The LE of a soil is the sum of these products for all soil horizons.

## Bear Sighting

I was mapping around Great Creek near Rt.644 in Brunswick County VA, down in the flood plain. It was summer time, hot and humid with all the dense green foliage at its prime. I was walking along and scared up a gang of turkeys. About an hour later I sat down on a newly fallen tree to rest and pick off the ticks I had collected earlier that morning when I heard something moving in the brush down towards the creek. I figured it was the turkeys again. Then I heard a stick break. I thought that it must be a deer. It was making too much racket for a turkey. I was getting excited, but I see deer practically every day while mapping. It was still down in the thick foliage, less than a hundred feet, and I didn't know exactly what it was. With

all my attention focused in that direction and ignoring the continual upward climbing of the ticks on my legs, I heard another stick break, closer this time. It was a larger stick; one I know a deer would have avoided. "It couldn't be a deer." I thought to myself. There had been a couple of bear sightings in the area within the past couple of months. So with that information calculating in my mind, it MUST be a BEAR! The sounds were coming closer. I still couldn't see the noisemaker, but my heart was racing. I wanted to see a bear; however, I didn't want to be so close. Being particularly young and invincible still, I decided to stay still so I wouldn't scare it away. I started seeing the tops of bushes move. Man, this is

close! Through the brush I caught a glimpse of black! What am I doing?! The adrenaline was flowing! Here it comes! It walks out of the thicker brush, looks at me holding my auger like a weapon, and lets out a loud MOOO.

I finally take a breath realizing in an instant that it was just a Black Angus cow that had gotten loose.

True Story

J. David Harper

## Beware of Tick-Borne Diseases

Spring marks the beginning of tick season across the United States.

In the southeastern United States, Rocky Mountain spotted fever (RMSF) is the most common tick-borne disease. Affecting more than 800 people in the United States each year, the disease is caused by a microorganism transmitted by a type of tick commonly found on dogs.

The first symptoms of RMSF - fever and/or headache - are so common to other illnesses that the disease is at first difficult to diagnose, said Dr. William Petri, professor of internal medicine, microbiology and pathology at the University of Virginia Health System. Most patients with RMSF eventually develop a spotted rash on the wrists or ankles, which spreads to the trunk, hands and feet.

Most cases of RMSF are treatable with antibiotics, but if the disease is left untreated, it can lead to death, Petri said. The really scary thing about Rocky Mountain spotted fever is that even with perfect treatment, five percent of patients die as a result of contracting it.

The best way to prevent RMSF and other tick-borne diseases is to check your body daily for ticks.

*"These pesky parasites carry a number of diseases that can lead to harmful infections in humans if left untreated."*

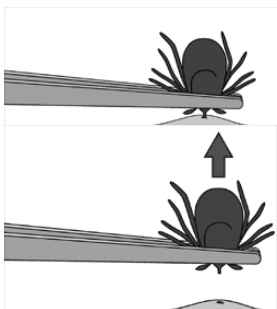
## Learn About Lyme Disease

Lyme disease is caused by the bacterium *Borrelia burgdorferi* and is transmitted to humans by the bite of infected blacklegged ticks. Typical symptoms include fever, headache, fatigue, and a characteristic skin rash called erythema migrans. If left untreated, infection

can spread to joints, the heart, and the nervous system. Lyme disease is diagnosed based on symptoms, physical findings (e.g., rash), and the possibility of exposure to infected ticks; laboratory testing is helpful in the later stages of disease. Most cases of Lyme disease can

be treated successfully with a few weeks of antibiotics. Steps to prevent Lyme disease include using insect repellent, removing ticks promptly, landscaping, and integrated pest management. The ticks that transmit Lyme disease can occasionally transmit other tick-borne diseases as well.

## Tick-Removal



Remove a tick from your skin as soon as you notice it. Use fine-tipped tweezers to firmly grasp the tick very close to your skin. With a steady motion, pull the tick's body away from your skin. Then clean your skin with soap and warm water. Throw the dead tick away with your household trash.

Avoid crushing the tick's body. Do not be alarmed

if the tick's mouthparts remain in the skin. Once the mouthparts are removed from the rest of the tick, it can no longer transmit the Lyme disease bacteria. If you accidentally crush the tick, clean your skin with soap and warm water or alcohol.

Don't use petroleum jelly, a hot match, nail polish, or other products to remove a tick

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## Upcoming Events

**July 9 to 15, 2006**  
World Congress of Soil Science  
- *Frontiers of Soil Science:  
Technology & the Information  
Age*  
Philadelphia, PA  
[www.18wcsc.org](http://www.18wcsc.org)

**July 14, 2006 –**  
VAPSS Quarterly Board Mtg.  
*Open to all members*  
Charlottesville, VA  
[soilmapper@yahoo.com](mailto:soilmapper@yahoo.com)

**July 26-27, 2006 –** VA Center  
for Onsite Wastewater Training  
*Wastewater Course*  
Blackstone, VA  
[www.sv.vccs.edu/acad/vcowt/](http://www.sv.vccs.edu/acad/vcowt/)

**June – Dec. 2006 –**  
NCSU Soil Science Extension  
*Soil Academy*  
Locations Across North Carolina  
[joni\\_tanner@ncsu.edu](mailto:joni_tanner@ncsu.edu)

**October 16-17, 2006 –**  
VAPSS Fall Meeting and  
Technical Session  
*Fall Zone Geomorphology,  
Heavy Mineral Mining, and  
Prime Farmland Reclamation*  
Stony Creek, VA  
[suebrown@vt.edu](mailto:suebrown@vt.edu)

## About Our Organization

The purpose of VAPSS is to:

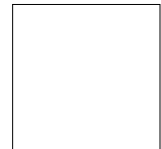
- ✓ Provide a forum for soil scientists
- ✓ Promote and enhance communication with other

technical disciplines

- ✓ Serve as a body of opinion on matters relating to soil properties (pedology) including mapping,

- ✓ Classification, and interpretation of soils
- ✓ Promote certification as a C.P.S.S. to any qualified individual

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**We're on the Web!**

See us at:  
[www.vapss.org](http://www.vapss.org)

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