Greetings

Tell me and I forget. Teach me and I remember. Involve me and I learn. ~ Benjamin Franklin ~

Experiential learning is learning by doing, and emphasizes hands-on experience and reflection. Experiential learning is a hot topic now, but as you can see from the quote above, it is hardly new. In fact, the German philosopher Immanuel Kant argued in the 18th century that both rationality (reason) and experience are valuable for the development of knowledge. In this spirit, Virginia Tech has embraced a “hands-on, minds-on” philosophy of learning, and we in CSES are trying to do our part. Experiential learning can take several forms, including study-abroad, internships, undergraduate research, professional competitions, and service learning. Students in Environmental Science and Crop and Soil Science have participated in all of these, and our faculty have worked hard and traveled far to develop these opportunities. Many students participate in paid and unpaid internships—some recently have traveled as far away as Alaska, Florida, or Canada. Undergraduate research may take our students across Virginia to contribute to faculty and graduate student research. As I write this column, student crops judges are traveling to Australia to compete (some for the second time) in an international contest. Two years ago some of our soil judges competed in South Korea. During the past four years, our faculty have led student groups on study abroad trips to Nepal, Senegal, Australia (twice), and Ecuador (three times) to increase their understanding of environmental challenges, biodiversity, and agriculture around the world. I’m convinced that great classroom learning along with experiential learning is a powerful combination, and we should commit to ensuring that every student in our programs has such opportunities. As an undergraduate, I competed on soil judging teams and participated in two national contests. I may have learned more from these experiences than in the classroom! With virtual reality and other technology advancing so rapidly, who knows what possibilities the future may hold? Experiential learning is an old idea, but it is the wave of the future in higher education.

CSES Faculty Go To China

For two weeks this past summer, eight VT faculty and staff traveled to China on a USDA Scientific Cooperative Exchange. The group included Mark Rieter (project PI), Bo Zhang, Wade Thomason, Ozzie Abaye, David Holshouser, Hunter Frame, Pat Donovan (all of CSES) and Ursula Deitch (Northampton Co. extension agent). We gave presentations and discussed soil fertility and nutrient management with Chinese scientists at the Tropical Crops Genetic Research Institute in Hainan Island, Shenyang Agricultural University, and private sector scientists in Shandong province and Beijing. We had time to visit several tourist sites in China including the Great Wall, Forbidden City, Tiananmen Square, Temple of Heaven, mango and rubber plantations, silk factory and enjoyed views of the countryside from the high speed train. – by Pat Donovan

Ozzie Abaye, Ursula Deitch and Bo Zhang at Dongya Seed company.

VT group gathered with Chinese hosts at the Tropical Crops Genetic Research Institute on Hainan Island, China.
**Student Highlights**

**Study Abroad – Cultural Immersion through Food**

During the first summer session (May 25 – June 6, 2016), five students accompanied Dr. Ozzie Abaye and Ryan Stewart on a study abroad trip to Ecuador. The course – titled “Cultural Immersion through Food” – had the main goal of allowing program participants to experience firsthand how food and agriculture have shaped and been shaped by Ecuadorian culture. The trip covered three different regions of Ecuador, each with unique ecology, culture practices, and food. The first stop was in the Amazonian community of Añangu, located within Yasuni National Park. Here the students learned about ecotourism, how local customs and practices were changing as the community modernized, and how traditional food and beverage customs were still cherished and celebrated. The group next traveled to the other side of the Andes Mountains, to a small village in the coastal foothills called Mashpi. The students stayed and worked with a group of farmers that were focused on using low-impact, sustainable farming practices to produce fruit and cacao for chocolate. The trip concluded with a stay in the Andean community of Peguche, where the students got to shop with the locals in the main market and then prepare and enjoy traditional meals, in addition to some site-seeing and shopping. Overall, all of the participants found the trip to be an amazing opportunity to explore the relationship between agriculture, food, and cultural traditions. – by Dr. Ryan Stewart

**CSS Students Attend the AFA Crop Science Institute**

Caitlin Atkins and I (Lydia Fitzgerald) traveled to Sacramento, California for the Crop Science Institute through the Agriculture Future of America (AFA) along with 3 other Hokies and about 70 other students studying agriculture from universities all over the nation. We had the opportunity to tour farms and many other agricultural companies such as Valent U.S.A. Corporation, Kautz Family Farms, California Tomato Growers Association, Pacific International Rice Mills- Bunge North America, and DuPont Pioneer Sunflower Seed Production Facility. It was interesting to experience the agricultural diversity that California has to offer. We also got to network with other students and with industry professionals through executive discussions, current trends in agriculture presentations, and round table discussions about careers in the crop and soil industry. We also had the opportunity to meet and hear from Eric Luftman, the Director of the Office of Agricultural Policy for the U.S. Department of State and also Karen Ross the California Secretary of Food and Agriculture. It was a great experience and we would encourage anyone interested to get involved. Especially since AFA rotates the location and next year the institute will be held in Raleigh, North Carolina. It was a great opportunity for us to learn more about the crop science industry on a national scale and to make essential and meaningful connections.

**New Faces in CSES**

**Welcome Incoming CSES Graduate Students**

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<th>Name</th>
<th>Advisor</th>
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<tr>
<td>Jabari Byrd – Dr. Fike</td>
<td>Oluwatosin “Tosin” Ogunmayowa – Dr. Steele</td>
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<td>Jose Da Cunha Leme Filho – Dr. Thomason</td>
<td>Ethan Sneesby – Dr. Daniels</td>
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<td>Andre Diatta – Dr. Thomason</td>
<td>Michael Swoish – Dr. Thomason and Dr. Reiter</td>
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<td>Clara Ervin – Dr. Reiter</td>
<td>William Vesely – Dr. Xia</td>
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<td>Suman Lamichhane – Dr. Fukao</td>
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<td>John Lewis – Dr. Stewart</td>
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Sometimes, seeing a career’s starting and endpoints can be puzzling if there’s no knowledge of the connecting “dots”. As I reflect on my career, I am starting to wonder if that will be the case for me. On joining the CSES faculty in 2000 in a research and teaching appointment, I stepped into the forage-livestock position once held by Roy Blaser and by Vivien Allen. As a young faculty member looking for opportunities, however, my efforts soon detoured from traditional forage livestock research. Work on silvopastures – the integration of trees with forage systems – began at the request of Jim Burger (Forestry, retired). I was skeptical, but I needed things to work on… Also during the pre-tenure years Dave Parrish and Dale Wolf provided me opportunity to work with them on biomass for bioenergy systems. Working in these two arenas could be a bit lonely as colleagues sometimes seemed to view with the same skepticism I had felt. That said these arenas have provided me some quite rewarding interactions with professionals beyond my traditional forage discipline. In 2012 I moved to a research and extension appointment which afforded me much greater opportunity to push the awareness of silvopastures beyond my university research plots. We have a great team of colleagues from multiple departments and agencies, and our concerted efforts to push silvopastures have garnered a statewide extension award. Several grants have helped support these efforts and this summer I received the John and Shirley Gerken award to support travel to Portugal this fall to the World Congress of Silvopastoral Systems talk about our work and experiences. Our team has developed research and demonstration sites across the Commonwealth and we see this program continuing to grow as producers are beginning to explore and implement silvopastures on farms. In addition to these efforts I have served several years as associate editor for Agroforestry Systems. Unlike the trajectory for silvopastures, the efforts with bioenergy have continued at a slower pace; oil at $40/bbl has reduced opportunity in this area. Although slowing down, the efforts on energy cropping interestingly have led me to another opportunity – hemp. Because of my efforts with biomass I was asked to write a white paper on hemp for former Montgomery Co. supervisor Jim Politis. Jim subsequently visited cities and municipalities across the state championing this maligned crop and helping change Virginia law to allow hemp research. Thus, I have become VT’s point person for evaluating the potential of this maligned crop and helping change Virginia law to allow hemp research. Thus, I have become VT’s point person for evaluating the potential of this maligned crop and I also am leading efforts to develop a federally-recognized multi-state research proposal for hemp. Although some are calling me “Dr. Hemp” now, it is one piece among many and it remains to be seen how important hemp will be among the puzzle pieces of my career. Regardless, it has been a source of entertainment to my family as we deal with “Bong” jokes – my wife Wonae’s maiden name and my son Jonah’s middle name. Along with new career adventures, my family is preparing for change in 2017. Daughter Mindolay (7th grade) is anxious and excited about school in France, where we’ll take a sabbatical semester next fall and son Jonah (12th grade) is considering where he’d like to continue his education.

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**Grants**

**Kelly Mercier and Chris Teutsch.** “Shade Effects on Yield, Botanical Composition, Nutritive Value, and Ergot Alkaloid Concentrations of Forage Mixtures for Silvopastures”, Southern SARE, $11,000

**Tracy, Benjamin.** “Establishing Native Warm-Season Grasses under Grazing,” Conservation Innovation Grant from USDA-NRCS. $50,855 for 3 years.


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**Publications**


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**Events**

Mid Atlantic Better Composting School. School participants will learn the basics of making and assessing high quality compost via classroom instruction, hands-on training, and visiting commercial operations. Training organized and conducted by instructors from the University of Maryland and Virginia Tech and invited guest speakers. Location: Beltsville, MD and nearby locales. Dates: September 26-30. For registration information, contact Gary Felton (301-405-1198, gfelton@umd.edu) or Greg Evanylo (540-231-9739, gevanylo@vt.edu).

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**Awards**

**Julie Burger Receives Outstanding CSES Research and A/P Faculty Award**

**Pat Donovan Receives Outstanding CSES Staff Award**

**Gordon Jones receives NACTA Graduate Student Teaching Award**
Awards

Dr. Lee Daniels Receives CALS Excellence in Applied Research Award

W. Lee Daniels was recognized for developing and leading an internationally recognized research program that aids the rehabilitation of drastically disturbed lands.

Dr. W.L. Daniels has developed an internationally recognized research program that applies soil science concepts to understand and rehabilitate disturbed lands. His work has aided development of state regulatory programs in coal-processing waste revegetation, coal combustion product management, biosolids’ utilization, prime farmland reclamation, acid-sulfate soil remediation, soil amendment labeling, and wetland restoration. Environmental management practices based on his research are being applied by industry and agencies in the USA, and overseas due to his international collaborations. He has won two major national research awards; presented numerous keynote addresses to national and international meetings; and advised numerous entities concerning disturbed land rehabilitation. Over the past 10 years, he has published >70 peer-reviewed articles and received >$5 million in grant funding.

One research focus has been enhancement of agricultural productivity on disturbed landscapes. He is developing reclamation strategies for mineral sands’ mining, a process that is projected to disturb ~ 5,000 acres of Virginia and North Carolina prime farmland by 2020. He is also working to rehabilitate eastern Virginia lands receiving sediments removed from waterways; and his work has demonstrated that, with proper management, land surfaces produced with these materials can have agricultural productivity exceeding that of native prime farmlands. Another area of long-term study is characterization and beneficial use of industrial-process residuals, such as biosolids and coal combustion products, as soil amendments and as remedial treatments on disturbed lands. Throughout much of his career, he has maintained a research focus in remediating lands affected by coal mining; in this area, his current work is characterizing and differentiating mining-disturbed rocks for potential reclamation uses. He has also been studying ecological functions in constructed wetlands, and his findings are being applied by the state transportation agency for constructing wetlands to mitigate road building.

Dr. Daniels has also applied his science internationally through active collaborations with colleagues in Australia, Brazil, China and Poland, applying soil science concepts to develop rehabilitation strategies for mined lands, acidic mining spoils, and metal-bearing smelter wastes.

Extension Highlights

2016 Virginia Ag Expo from Dinwiddie County

The 2016 version of the largest agricultural field day in Virginia was held August 4, 2016 with over 1800 attendees, including Governor McAuliffe, and 150 exhibitors visiting Double “B” Farms, run by Billy Bain. The theme of this years’ event was “Celebrating Southside Virginia’s Agricultural Diversity” and the field tours reflected that diversity. Presentations were given on management of corn, soybean, sorghum, cotton, peanuts, tobacco, sweet potato and soil fertility by faculty from the departments of CSES, Horticulture and PPWS and by Virginia Cooperative Extension agents. In addition, the event featured demonstrations on beef cattle grading and niche pork production. David Holshouser, Associate Professor and Soybean Agronomist noted that “field tour attendance was the highest in several years and we attribute that to the diversity and quality of educational opportunities offered this year. Mike Parrish, the Agriculture Extension Agent in Dinwiddie County who put the program together deserves most of the credit for this years’ success”. The Ag Expo is hosted on different family farms from around Virginia each year but is always held on the first Thursday of August. The Virginia Ag Expo is sponsored by the Virginia Grains Producers Association and the Virginia Soybean Association, in cooperation with the Virginia Cooperative Extension Service.