

## Greetings

Spring came early to Blacksburg this year with several days in the 70's in late February and all of our early flowering plants are in full bloom. We are currently on Spring Break as I write this, giving me some time to provide a little update on our various programs.

One of the new developments in undergraduate programs at Virginia Tech over the past several years has been "Wintermester" courses which are taught between the Fall and Spring Semesters. These varied offerings allow students to take regular 3-credit courses in an intensive daily format or to participate in a range of study abroad programs. This year, we offered two programs, one to South Africa (led by Dr. Ozzie Abaye) and another to Ecuador and the Galapagos Islands (led by Dr. Matt Eick). Another great experiential learning activity each year is provided by Dr. John Galbraith's Soil Judging Team who will be making a trip to their national competition hosted by the University of Tennessee at Martin in early April. All three of these programs involved 10 to 15 undergraduates and are always enthusiastically received by our students.



Dr. Lee Daniels

As I discussed in our last newsletter, we are now well into the process of merging our CSES programs with those of Horticulture and Plant Pathology, Physiology and Weed Science into the new School of Plant and Environmental Sciences (SPES). Our new Director, Dr. Mike Evans, will arrive in mid-April and oversee the final process leading to the School being fully operational by July 1, 2018. Dr. Evans comes to us from the University of Arkansas where he was Interim Associate Dean of the Dale Bumpers College of Agricultural, Food and Life Sciences. Another important development related to the formation of the new School is the recent announcement that we will be hiring a number of new tenure-track faculty positions. The first two will be focused on (1) Ecological Restoration and (2) Genomics and Breeding of Horticultural Specialty Crops. These positions were developed jointly by all three departments and we look forward to having some fresh faculty faces in the near future.

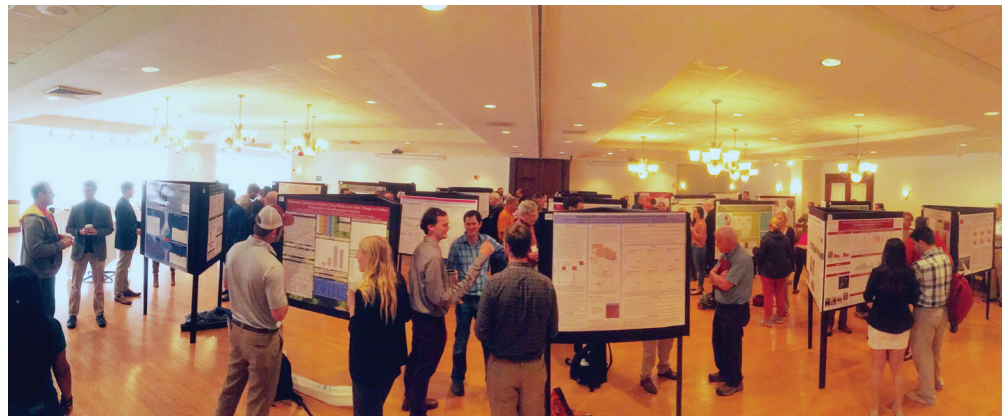


Dr. Jan Low

One of our graduate student program highlights this winter was the annual Blaser Endowment Lecture in mid-February. Our featured speaker this year was Dr. Jan Low, Co-Winner of the 2016 World Food Prize for her work on sweet potato breeding, management and human nutritional programs in Africa. Her inspiring talk was followed the next day by the Graduate Student Research Symposium for SPES which featured over 55 poster presentations and was attended by over 150 faculty, staff and students.

I hope you enjoy this edition of our newsletter and I wish you the best for the spring season!

W. Lee Daniels, Interim Head



SPES Graduate Student Research Symposium

## CSES Spotlight



**Dr. Mark S. Reiter**

I was fortunate to move back to the Commonwealth after finishing my Ph.D. program in 2008. I grew up on a diversified farm (grain, peanut, hog and cattle) in Dinwiddie County, Virginia on sandy loam soils and developed interest in increasing farm profitability and sustainability by implementing best management practices. After graduating high school, I began my undergraduate program in CSES at Virginia Tech in the Agroecology option. There, I was involved in the Agronomy Club and Crops Judging Team as well as working in the department for the small grains program. I moved on to Auburn University for my M.S. in Agronomy in 2001 and worked with nitrogen cycling in cover crop systems. From there I continued a stint in the deep south by working with nutrient cycling in rice, cotton, and corn systems in the Mississippi River Delta with the University of Arkansas.

On July 4, 2008, I officially drove the moving truck across the 23 mile Chesapeake Bay Bridge Tunnel with my wife, Sara, to settle on the Eastern Shore of Virginia. Here, I serve as Extension Specialist of Soils and Nutrient Management at Virginia Tech's Eastern Shore AREC. With my 50-50 appointment split between research and extension, I work with vegetable, grain, oilseed, and fiber crop systems. I have maintained my diversified interest and currently work with improving fertilizer use efficiency, alternative fertilizer additives and sources, utilizing poultry litter and ash co-products as value-added fertilizers, and utilization of cover crops for nutrient cycling and soil quality improvement.

I enjoy spending time with my children Sadie and Caleb, who are 7 and 3 years old, respectively. Caleb was born on the 100th anniversary of Extension! They both enjoy traveling, so maybe I will bring them to campus the next time I make the 6.5 hour journey!

## Awards

### **Dr. David Holshouser receives Virginia Agribusiness Council's Land Grant University Award**

This award is presented annually to an outstanding faculty member, administrator, or employee of a Virginia Land Grant University for meritorious or exemplary service to the industry of agribusiness during their career.



## Soybean Breeders Workshop

Members from the Virginia Tech Soybean Breeding Program attended the 2018 Soybean Breeders Workshop in St. Louis, MO from February 12-14. The Soybean Breeders Workshop is an annual meeting of plant breeders and researchers from both the public and private sectors of the soybean industry. The theme of this year's meeting was "Entomology in Soybean" and featured a diverse array of talks from plant breeders, entomologists, pathologists, biochemists, and genomicists. CSES graduate students, Matthew Colson and Nick Lord, from the VT Soybean Breeding program competed against other graduate students and post-doc's in a poster competition, in which Nick's poster on Edamame production made it to the final round of judging. Aside from participating in the poster competition and attending talks, the workshop presented an excellent opportunity for members of the VT Soybean Breeding Program to reconnect with old colleagues, expand their professional networks, and learn about some of the exciting new research going on around the industry.



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## Extension Highlights

### 2017 Carl Luebben Soil Health and Water Quality Awards

At the 2017 Virginia Farm to Table Conference, Eric Bendfeldt presented the 2017 Carl Luebben Soil



Health and Water Quality Awards to Bridgewater brothers Kevin and Steve Craun and Augusta County farmer Ryan Blosser for their contributions to conservation in the Commonwealth. Sponsored by Houff Corporation, the award is named for Luebben, a former Houff salesman known for his passion for agronomy, sustainable systems, soil health research and mentorship of conservation professionals.

### Publications

**Qin, C. W. Zhang, B. Yang, X.W. Chen, K. Xia, Y. Z. Gao.** 2018. DNA facilitates sorption of polycyclic aromatic hydrocarbons on montmorillonites. *Environ. Sci. Technol.* (in press).

Chen, C. Q., P. Ray, K. F. Knowlton, A. Pruden, and **K. Xia.** 2018. Effect of composting and soil type on dissipation of veterinary antibiotics in land-applied manures. *Chemosphere.* 196:270-279.

Chao, Q., C. Q., Chen, C. Shang, and **K. Xia.** 2017. Fe<sup>3+</sup>-Saturated Montmorillonite Effectively Deactivates Microorganisms in Wastewater. *Sci. Total Environ.* 622-623:88-95.

Clark E.V., **W.L. Daniels, C.E. Zipper,** K. Eriksson. 2018. Mineralogical influences on water quality from weathering of surface coal mine spoils. *Applied Geochemistry* 91: 97-106.

Lee, D. K., E. Aberle, E. K. Anderson, W. Anderson, B. S. Baldwin, D. Baltensperger, M. Barrett, J. Blumenthal, S. Bonos, J. Bouton, D. I. Bransby, C. Brummer, P. S. Burks, C. Chen, C. Daly, J. Egenolf, R. L. Farris, **J. H. Fike,** R. Gaussoin, J. R. Gill, K. Gravois, M. D. Halbleib, A. Hale, W. Hanna, K. Harmony, E. A. Heaton, R. W. Heiniger, L. Hoffman, C. O. Hong, G. Kakani, R. Kallenbach, B. Macoon, J. C. Medley, A. Missaoui, R. Mitchell, K. J. Moore, J. I. Morrison, G. N. Odvody, R. Ogoshi, J. R. Parrish, L. Quinn, E. Richard, W. L. Rooney, J. B. Rushing, R. Schnell, M. Sousek, S. A. Staggenborg, T. Tew, G. Uehara, D. R. Viands, T. Voigt, D. Williams, L. Williams, L. T. Wilson, A. Wycislo, Y. Yang, V. Owens. 2018. Biomass production of herbaceous energy crops in the United States: Field trial results and yield potential maps from the multiyear Regional Feedstock Partnership. *Global Change Biology Bioenergy.* <http://onlinelibrary.wiley.com/doi/10.1111/gcbb.12493/full>

Timpano A.J., **C.E. Zipper,** D.J. Soucek, S.H. Schoenholtz. 2018. Seasonal pattern of anthropogenic salinization in temperate forested headwater streams. *Water Research* 133: 8-18.

**Favorito, J.E., M.J. Eick,** and P.R. Grossl. 2017. Adsorption of Selenite and Selenate on Ferrihydrite in the Presence and Absence of Dissolved Organic Carbon. *J Environ Qual.* 47(1): 147-155.

**Bamber, K.W., G.K. Evanylo, and W.E. Thomason.** 2018. Rapid estimation of potentially mineralizable N in early spring following fall biosolids applications to winter wheat. *Communications in Soil Science and Plant Analysis.* Published online Feb 1. <https://doi.org/10.1080/00103624.2018.1431273>

Fannon, A.G., J.H. Fike, S.P. Greiner, C.M. Feldhake, M.A. Wahlberg. 2017. Hair sheep performance in a mid-stage deciduous Appalachian silvopasture. *Agrofor. Syst.* DOI 10.1007/s10457-017-0154-x

**Fike, J. H., J. A. Pease, V. N. Owens, R. L. Farris, J. L. Hansen, E. A. Heaton, H. S. Mayton, R. B. Mitchell, D. R. Viands.** 2017. Switchgrass nitrogen response and cost of production on diverse sites. *Global Change Biology Bioenergy.* 9:1526-1542. <http://onlinelibrary.wiley.com/doi/10.1111/gcbb.12444/full>.

**Fike, J., A. Downing, J. Munsell, G. Frey, K. Mercier, G. Pent, C. Teutsch, J.B. Daniel, J. Fisher, M. Adams, T. Groh.** 2017. Creating silvopastures - Some considerations when planting trees into Pastures. VCE Publication CSES-185P. [https://pubs.ext.vt.edu/content/dam/pubs\\_ext\\_vt\\_edu/CSES/CSES-185/CSES-185P.pdf](https://pubs.ext.vt.edu/content/dam/pubs_ext_vt_edu/CSES/CSES-185/CSES-185P.pdf)

Mourtzinis, Spyridon, Gurpreet Kaur, John M. Orlowski, Charles A. Shapiro, Chad D. Lee, Charles Wortmann, **David Holshouser,** Emerson D. Nafziger, Hans Kandel, Jason Niekamp, William J. Ross, Josh Lofton, Joshua Vonk, Kraig L. Roozeboom, Kurt D. Thelen, Laura E. Lindsey, Michael Stanton, Seth L. Naeve, Shaun N. Casteel, William J. Wiebold, Shawn P. Conley. 2018. Soybean response to nitrogen application across the United States: A synthesis-analysis. *Field Crops Res.* 215: 74-82. <https://doi.org/10.1016/j.fcr.2017.09.035>

Parvej, M.R., A.S. Williams, **M.S. Reiter, W.H. Frame and D.L. Holshouser.** 2018. Double-crop soybean response to potassium on Mid-Atlantic coastal plain and piedmont soils. *Agron. J.* (accepted).

**Chim, B.K., D. Holshouser,** H. Behl, M. Balota, **K. Xia, W.H. Frame, T. Black and W.E. Thomason.** 2017. Comparison of full season and double crop soybean and grain sorghum systems in central and southeast Virginia. *Agron. J.* doi: 10.2134/agronj2016.10.0577.

Williams, A. S., Md. R. Parvej, **D. L. Holshouser, W. H. Frame, and M. S. Reiter.** 2017. Correlation and Calibration of Soil-Test Potassium from Different Soil Depths for Full-Season Soybean on Coarse-Textured Soils. *Agron. J.* 0. doi:10.2134/agronj2017.06.0344.

Williams, A. S., Md. R. Parvej, **D. L. Holshouser, W. H. Frame, and M. S. Reiter.** 2017. Correlation of Field-Moist, Oven-Dry, and Air-Dry Soil Potassium for Mid-Atlantic USA Soybean. *Soil Sci. Soc. Am. J.* 0. doi:10.2136/sssaj2016.10.0324.

**Zhang, X.,** W. Wu, E. H. Ervin, C. Shang, and K. Harich. 2018. Salt stress-induced injury is associated with hormonal alteration in Kentucky bluegrass. *HortScience* 53:97-101.

### Grants

**Evanylo, G. and W.L. Daniels.** Development and testing of Blue Plains Bloom-mineral recipes. Sponsor – Metropolitan Washing Council of Governments. Amount - \$60,000

### Dr. Stewart and Dr. Thompson Lead a Workshop in Kenya

In November, CSES Assistant Professor Ryan Stewart joined CALS Associate Dean for Global Programs Tom Thompson to lead a week-long short course titled “Retooling Workshop on Research Analytics and Development of Fundable Proposals.” This workshop was part of a Virginia Tech partnership with Egerton University to develop a Centre of Excellence in Sustainable Agriculture and Agribusiness Management. Twenty-three faculty members and research associates from six African nations attended the workshop; their enthusiastic participation made the workshop a success for all.



### CSES Students Attend Conference on Global Food Security in Capetown, South Africa



Four Virginia Tech students: Sarah Bateman, Abigail England (AAEC), Madelyn Dynes, and Abigail Han, working with Ozzie Abaye, a professor in the Crop, Soil, and Environmental Sciences Department, participated in the third International Conference on Global Food Security. More than 660 individuals from 60 countries, the majority from Africa, attended the meeting. The opening ceremony highlighted three crosscutting initiatives: the use of technology to solve global food and nutrition security, empowerment of youth, and the role of women in agriculture.

### Students Study Abroad in Ecuador

Over winter session, 17 students traveled to Ecuador with Dr. Matt Eick and Dr. Renee Eaton (HNFE) on a study abroad titled, “Environment, Health and Culture.” Students traveled to three ecoregions (Andes Paramo, Amazon rainforest, and Galapagos Islands) and explored how human well-being and Health are inextricably linked to the environment.



### Students Study Abroad in South Africa



Over winter session, 15 students traveled to South Africa with Dr. Ozzie Abaye and Dr. Mark Reiter on a study abroad titled, “A Focus on Food Security, Wildlife, and Conservation.” Students traveled to Kruger National Park, the University of Stellenbosch near Capetown, and visited large and small farms throughout the country. The students learned about food production, distribution and utilization as well as the potential wildlife contributions to agriculture and food security.