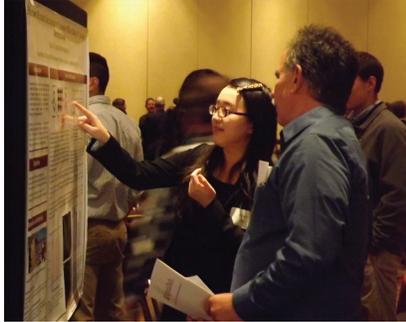


## Greetings

The second CSES Graduate Research Symposium was held in early February at the Inn at Virginia Tech. The purpose of the event, as for last year's event, was to highlight the outstanding research being done by our graduate students. For this



Chao Qin, 3rd place poster winner from CSES.

year's event, we teamed up with the Department of Horticulture and more than 125 students, faculty, staff, and friends attended. We held a combined poster contest—fiercely contested with more than 50 entries—and the top two posters were from Horticulture. Chao Qin, a CSES graduate student with Dr. Xia, won third prize. Dean Grant and all

three CALS Associate Deans attended also! This year, we combined the Graduate Research Symposium with the Blaser Distinguished Lecture, which was given by Mark Alley, the Wysor Professor Emeritus of CSES. Mark's lecture was aimed at helping graduate students to think strategically about their research and how the knowledge they generate will fit into a global context. I wish that I had heard this talk when I was in graduate school 30 years ago! It was a great event, and I heard many positive comments afterward. I think it was even better than the first event in 2015, which is saying something! As we did last year, we invited six of our top prospective graduate applicants to spend the day with us, and experience Virginia Tech and Blacksburg. Several of these guests will be coming for graduate study in CSES, and I know that the opportunity to see the great work happening in the department was important in their decisions. Thanks to everyone who helped to make the event such a great success.



Tom Thompson



Dr. Mark Alley delivers the Blaser Distinguished Lecture.

## Dr. Kang Xia was VT Scholar of the Week



Dr. Kang Xia

The Office of the Vice President for Research and Innovation recognized Dr. Kang Xia as the Scholar of the Week for the last week of January, for her work to protect the environment. She is concerned with the occurrence, fate, and ecological impact of volatile organic chemicals that, because of human activity, have gotten into soil and water. She has a special focus on detecting and understanding contaminants emerging from biosolids. She works to develop ways to detect trace-level emerging contaminants in complex environmental matrixes and is also concerned with the occurrence and fate of hormones and their conjugates in animal waste and the environment. Looking ahead, Xia says the fate and impact of chemical pollution has focused almost exclusively on the conventional pollutants such as pesticides and industrial chemicals. But a diverse group of bioactive chemicals such as pharmaceutical compounds and personal care products are becoming more frequently detected in the environment and may potentially have a negative impact on aquatic and terrestrial organisms. Because of their close association with human activities and concentrated animal productions, this class of compounds and their bioactive metabolites are closely associated with wastewater, biosolids, and animal waste. Xia says research opportunities are growing in the development of analytical methods to detect these substances in complex environments, the development of treatment techniques to reduce the substances, and understanding their fates in wastewater, biosolids or animal waste amended soils.

## New Faces in CSES



Joe Buckwalter –  
Research Associate  
(Dr. Carl Zipper)



Tammy Holler -  
Vegetable and Small  
Farm Nutrient  
Management  
Specialist

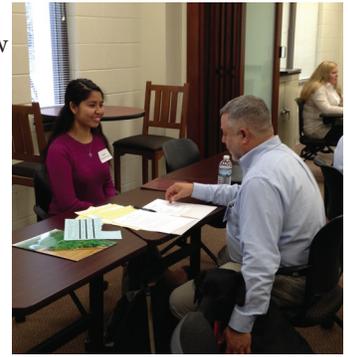


Valerie Moore –  
Dairy Farm Nutrient  
Management  
Specialist

# CSES Hosts 2nd Mock Interview Event

On Tuesday, Dec. 1st, the Department of Crop and Soil Environmental Sciences (CSES) hosted a mock interview event for undergraduate and graduate students. Eight employers, five of whom are CSES alumni participated:

- Eric Frazier – Willow Oaks Country Club (crop and soil environmental sciences, 2000)
- Jeannine Freyman – NRCS
- Ronnie Gill – Colonial Farm Credit (agronomy, 1982)
- James Golden – Virginia Department of Environmental Quality
- Dan Goerlich – Virginia Cooperative Extension (forestry and wildlife, 1994)
- Ken Hyer – US Geological Survey (environmental science, 1994)
- Mike Rolband – Wetland Studies and Solutions
- Lindy Tucker – Virginia Cooperative Extension (crop and soil environmental sciences, 2011)



ENSC student, Analit Chambi-Rojas practices interviewing with employer, Mike Rolband.

The event was organized to help students with their interviewing skills and give them a taste of what it is like to interview for a professional position. Thank you to all the employers and students that participated!

## Student Highlights

### VT Crops Judging Team Competed in Kansas and Chicago



From left to right: Lucas Rector, Jamie Hodnett, and Colton Sullivan at the competition in Kansas City. Lucas Rector received 3rd place, All American in Grain Grading in Chicago.

### Soybean Leadership College

Funded by the Virginia Soybean Board, Colton Sullivan, Mallorie Wright, and Jamie Hodnett attended Soybean Leadership College in Orlando, Florida during winter break.



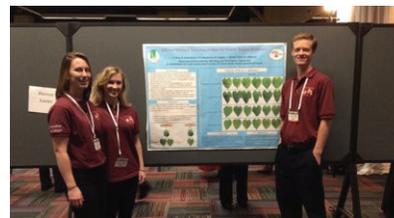
### 2016 Golf Turf Bowl Team



2016 Team at Golf Course Superintendent's Association of America Collegiate Turf Bowl in San Diego, CA on February 11. 15th place out of 62 teams.

From left to right Travis Roberson, Matthew Herrmann, Joshua Lillard, Lee Coppock, Camden Shelton (graduate student coach)

### Crop Genetics and Breeding Students Attend ASTA Seed Trade and Corn/Soybean/Sorghum Conference



From left to right: Kayla Bond, Lindsay DeMers, and Nick Dietz

### 2016 Sports Turf Team

Finished 5th out of 22 teams in the 4-yr degree team completion on January 22, 2016 in San Diego. Team members were C.J. Buck, Drew Miller, Ty Vaden, and Kody Tingler.

### Environmental Science, Health and Latin American Culture

During winter session, 17 students and three instructors traveled to Ecuador to focus on research and outreach that engaged students in a multicultural perspective focused on the interaction of Latin American culture, human health, and environmental issues. Working with faculty at the Universidad San Francisco de Quito, students had the opportunity to travel to three ecoregions in Ecuador that included Galapagos Islands, Andes Paramo, and Amazon rainforest. Students experienced Ecuador's incredible biodiversity while examining how culture, government policies, and economics affect the environment which in turn impacts long-term human health. Students examined the influence of tourism, over-fishing, and climate change pressures in the Galapagos Islands; the effects of oil exploration and drilling on the environment and the health of indigenous people of the Amazon; and the health, nutritional, and environmental challenges associated with the development in the Andes Mountains and how that affects indigenous communities. This unique educational experience had a profound impact on the students as well as the instructors. Some students found the trip solidified their career plans while others saw opportunities for experiences such as language study, research, and study abroad. Many students found themselves examining their behavior, particularly as consumers, and making changes to decrease their carbon footprint. As one student stated "this was a profound educational experience and was beyond the trip of a lifetime".



Professors and students in Ecuador.

## Faculty Spotlight



Dr. Charles Hagedorn

Charles “Chuck” Hagedorn has been a Virginia Tech professor since 1986. He taught a senior-level course, Environmental Microbiology, for 20+ years, the last 11 during both spring and fall semesters, due to increased demand. He has received numerous outstanding service awards

from organizations including the USDA, USEPA, the American Society for Microbiology, and the National On-site Wastewater Recycling Association. Prior to Virginia Tech, he was on the faculties at Oregon State University and Mississippi State and then managed a biotechnology research program for Allied-Signal Corporation. His research and teaching expertise at VT has included public health aspects of pathogens in the environment, management of fecal microbes in waste treatment and application, and determining sources of fecal pollution in water.

For the first half of his tenure at VT, he was involved with research on biological nitrogen fixation to improve forage and grassland grazing systems including international collaborations in Australia, Spain, Ethiopia, and Kenya. He also developed in collaboration with Dr. Ray Reneau, alternative on-site waste systems for the different VA geographical regions. The alternative systems from that project are currently used by the Virginia Department of Health.

Over the past 17 years, he conducted research on the development of microbial source tracking methods and protocols, and deployed these to determine sources of fecal pollution in water in 40+ projects in Virginia and 16 in other states and the District of Columbia, plus projects in Puerto Rico, Canada, Egypt, Spain, and China. Perhaps the largest and most difficult of these was in China, where he worked on restoration of the lower Yangtze River with scientists from the Jiangsu Provincial Center for Disease Control and Prevention in Nanjing and the Changiang Water Resources Commission in Wuhan. While on sabbatical in 2012, at the Southern California Coastal Water Research Project in Costa Mesa, CA, he participated in research to identify the best DNA-based fecal source markers to develop more accurate source tracking methods. He also served as senior editor and author on a book *Microbial Source Tracking: Methods, Applications, and Case Studies*. Over his career he has generated \$5.5 million in external grants and contracts, has published 152 peer-reviewed journal articles, and fourteen Ph.D. and twenty-two M.S. students completed their degrees under his direction.

Chuck and his wife Sue (a retired VT Instructor in English) live in nearby Floyd County, on property they share with an abundance of wildlife and birds, plus a healthy population of fish in a 1.5 acre pond. He and Sue raised two daughters; the oldest, Sarah, is a marine biologist and civil employee of the U.S. Navy. She and her husband (a golf pro) and 5-year old daughter live in Virginia Beach. The youngest, Rosa, is an attorney, and she and her husband, a Sargent in the U.S. Army, live on the island of Oahu in Hawaii.

## Grants

**Evanylo, G.**, D. Close, and J. Samtani. Title: From food deserts to agrihoods: Transforming food insecure neighborhoods with comprehensive urban agriculture education. Sponsor: Virginia State University (via NIFA). Amount: \$57,854. Period: Oct 1, 2015-Sep 30, 2016.

**Donovan, Patricia and Carl Zipper**, Spatial Analysis of North Carolina's Local Food System: A targeted approach to allocating investment, NC State University and USDA, February-June 2016, \$10,000.

D. L. McLaughlin, K. J. McGuire, **R. D. Stewart**, and B. D., Strahm. Integrated environmental quality sensing system. DOE-SBIR/STTR. 2016. \$66,848

**Stewart, R. D.**, M. Schreiber, D. L. McLaughlin. Surface-subsurface connectivity in karst landscapes: implications for terrestrial water and carbon fluxes. Virginia Tech Global Change Center Seed Fund. 2016. \$13,990

## Publications

**Evanylo, Gregory K.**, Shea N. Porta, Jinling Li, Dexin Shan, **J. Michael Goatley**, and **Rory Maguire**. 2016. Compost practices for improving soil properties and turfgrass establishment and quality on a disturbed urban soil. *Compost Science and Utilization*. 24:136-145.

Prince, S. J., Li, S., Qiu, D., Maldonado dos Santos, J. V., Chai, C., Joshi, T., Patil, G., Valliyodan, B., Vuong, T. D., Murphy, M., Krampis, K., Tucker, D. M., Biyashev, R. Dorrance, **A. E., Saghai Maroof**, M. A., Xu, D., Shannon, J. G., Nguyen, H. T. 2015. Genetic variants in root architecture-related genes in a Glycine soja accession, a potential resource to improve cultivated soybean. *BMC Genomics*. 16:132. doi:10.1186/s12864-015-1334-6.

Redekar N., R. Biyashev, R. Jensen, R. Helm, E. Grabau, **M. Saghai Maroof**. 2015. Genome-wide transcriptome analyses of developing seeds from low and normal phytic acid soybean lines. *BMC Genomics*. 16:1074, DOI 10.1186/s12864-015-2283-9.

Jervis J., C. Kastl, S. Hildreth, R. Biyashev, E. Grabau, **M. Saghai Maroof**, R. Helm. 2015. Metabolite profiling of soybean seed extracts from near-isogenic low and normal phytate lines using orthogonal separation strategies. *J. Agric. Food Chem.* 63:9879-9887.

Ilut, D.C., A.E. Lipka, N.J. Dong, N.B. Dong, H. Kim, J.H. Kim, N. Redekar, K. Yang, W. Park, S.T. Kang, N. Kim, J.K. Moon, **M.A. Saghai Maroof**, M.A. Gore, and S.C. Jeong. 2015. Identification of haplotypes at the Rsv4 genomic region in soybean associated with durable resistance to soybean mosaic virus. *Theoretical and Applied Genetics*. DOI 10.1007/s00122-015-2640-8.

**Stewart, R. D.**, D. E. Rupp, M. R. Abou Najm, and J. S. Selker. 2015. A unified model for soil shrinkage, subsidence and cracking. *Vadose Zone Journal*. doi: 10.2136/vzj2015.11.0146.

Clark E.V., **C.E. Zipper**. 2016. Vegetation influences near-surface hydrological characteristics on a surface coal mine in eastern USA. *Catena* 139: 241-249.

Boehme E. A., **C.E. Zipper**, S.H. Schoenholtz, D.J. Soucek, A.J. Timpano. 2016. Temporal dynamics of benthic macroinvertebrate communities and their response to elevated specific conductance in Appalachian coalfield headwater streams. *Ecological Indicators* 64: 171-180.

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## Awards



Dr. John R. Hall III

### Dr. John “Jack” R. Hall III the proud recipient of the Honorary Member Award from Turfgrass Producers International

The TPI Board of Trustees have announced that Dr. John “Jack” R. Hall, III, Professor Emeritus of Crop and Soil Environmental Sciences Virginia Tech has been selected as the recipient of TPI’s Honorary Member award. This esteemed award is presented to an individual who has, significantly improved and made a major contribution to the turfgrass industry. The Honorary Member award recipient is selected by a vote of the Board of Trustees based on individuals nominated by members at large.

### J.B. Daniel Selected as the American Forage and Grassland Council’s Pastureland Conservationist of the Year

Native Virginian, J.B. Daniel, recently received the American Forage and Grassland Council’s Pastureland Conservationist of the Year award for his exceptional education and outreach to promote sustainable grazing practices statewide. This annual award recognizes a Natural Resources Conservation Service (NRCS) employee who has exemplified outstanding service to the agency, our clients, and the science of grazing land management. Daniel received this recognition for excelling in five categories: communication, training, partnerships, conservation application, and job complexity. J.B. holds B.S. and M.S. degrees in Crop & Soil Environmental Sciences from VA Tech and now works as a Forage and Grassland Agronomist for USDA’s Natural Resources Conservation Service.



J. B. Daniel receiving his Conservationist of the Year award.



Dr. Mike Goatley receiving the Harry C. Gill Founders Award.

### Dr. Michael Goatley receives the 2015 Harry C. Gill Founders Award

The Gill Award recognizes, among other noteworthy values, the recipient’s commitment to nurturing, encouraging, and empowering the very best ideals our association strives to embody. Harry “Pops” Gill, as one of our four original founders, exemplified this commitment by ensuring a still-young STMA would grow successfully as an organization for the betterment of all sports turf managers. Mike is one of the most influential professionals in our business. He is approachable, genuine and humble, with a great sense of humor and a quick wit. He is also a sought-after speaker and an author of a book that is considered a must-have resource for sports turf managers. Friend to all, Mike is very serious about educating our next generation. That next generation also holds Mike in high esteem. It was noted in the nomination form that he bleeds STMA green (and a little Kentucky blue that traces back to his roots). The Gill award recognizes dedication. Mike’s dedication was very visible when he served as a two- term president of STMA, without complaint, yet we know he had to sacrifice personal and family time to do so. There is not a more deserving individual in our association to receive the Gill Award.

### CSES Graduate Student, Mike Badzmierowski, Announced as one of Tri-Societies Future Leaders in Science Award Recipient

The American Society of Agronomy (ASA), Crop Science Society of America (CSSA) and Soil Science Society of America (SSSA) have selected the 2016 ASA, CSSA, and SSSA Future Leaders in Science Award. Mike Badzmierowski, Virginia Tech, is one of 18 graduate students’ members who will receive the award in recognition of his interest and engagement in science advocacy. Award winners receive a trip to Washington, D.C. to participate in the annual ASA, CSSA, and SSSA Congressional Visits Day, where they will meet with their members of Congress and advocate for agricultural and environmental research. Mike Badzmierowski is a first year Master’s degree candidate where his research will focus on assessing the effects of biosolids use in urban disturbed soils under the direction of Dr. Gregory Evanylo. Mike received his B.S. in Environmental Science and Management at the University of Rhode Island (2015). At Virginia Tech, Mike is the President of the College of Agriculture and Life Sciences Graduate Student Council and an assistant coach to the VT Soil Judging Team as well as serves on the National Soil Judging Committee.



Mike Badzmierowski

## Where Are They Now?

Past CSES Crop Judgers with Dr. Ozzie Abaye: From left to right - Kelly Smith (works for NRCS); Dr. Ozzie Abaye; Nick Moody ( Helena Chemical Co.); Karri Honaker (NRCS); Sarah Burselson - the bride ( Monsanto - Research Scientist); Ashleigh Shifflett ( Southern States - feed and fertilizer Co.) and Michael Drew Monahan (Isle of Wight, VA farmer).

