Congratulations to our recent summer graduates. It is always rewarding to see a milestone met. Our graduates continue to be sought out by academia, industry, government agencies and non-profits. September 1, we will be welcoming the class of 2018 and with them re-energizing our department with their enthusiasm for the future. From sustainable soils to turfgrass water management to developing improved crop quality with higher yielding varieties, the demand for graduates of our department has seldom been higher.

Congratulations to our recent hires around the State (see stories inside). We are very pleased to be filling several positions around the state that have been redefined to enhance the future of Soil and Crop Sciences in our vision “to be the best at providing the world with sustainable food, feed, fiber, and fuel in a safe and aesthetically pleasing environment through discovery, education, and application.”

Budgets at State and Federal levels are projected to be level in the near future, industry and producer budgets continue to be constrained by the impact of multiyear drought and decreased commodity prices. However, the long term success of our friends and former students has led to the potential for significant increases in benevolent giving. Lauren Thompson has been working to develop support materials for making donors aware of the many ways they can support the department. I have committed significantly more time to meet with potential donors and foundation officers to enhance our efforts in everything from graduate student support to endowed professorships, to support of our club teams and recruiting scholarships.

We have finalized the transition of Dr. McFarland as associate department head and he has planned a retreat for our extension unit for October 28-30. Thanks again to Dr. Travis Miller for all he did and best wishes as he moves into his new role as Interim Director for State Operations. We will soon complete hiring for Corpus position and initiate hiring for crop extension specialist at Vernon and soil fertility/water quality at College Station.
Special thanks to our Harvest Festival committee as they have worked to organize a great event for Friday October 10. It will be at the Wellborn community center again this year.

We have had great visits with NRCS representatives, Alcoa, Scotts, corn producers, cotton producers and rice producers in the recent past. We appreciate the time they take to engage with us. We have been working to expand our connections with the planned center focusing on geospatial analyses and to investigate the use of unmanned aerial vehicles in our research efforts. I have had the opportunity to participate in the National Association of Plant Breeders as President of CSSA and to work with the ACCESS board in Madison. The vigor of our major societies is as strong as it has been in many years. We engage heavily in preparing to celebrate the International Year of Soils in 2015.

Texas is a big State, and harvest of our summer crops is moving north and in full swing. I encourage vigilance in safety as we hit long, hot days with significant travel around the state. Thanks for all you do to make a difference!

David
Sympathy

Please keep Dr. Dale Pennington’s family in your prayers. Dr. Pennington passed away in July. He was a professor, extension specialist, and the Director of the Soil, Water and Forage Testing Laboratory for our department.

Welcome to the Department

Matthew Elmore has been hired as an assistant professor and Texas A&M AgriLife Extension Service turfgrass specialist for the Dallas region.

“I’m extremely excited to begin serving Texans interested in advancing their understanding and management of turfgrass systems,” Elmore said. “I will strive to bring high quality, relevant and innovative educational programming backed with sound science to turfgrass professionals and homeowners across the state. My experience in research pertaining to warm- and cool-season turfgrasses and their pests will serve me well across the diverse climates in Texas.”

Haly Neely has been hired as an assistant professor in Spatial Soil and Water.

Haly is originally from Eastern Washington State. She graduated from Washington State University with a B.S. in agricultural communications and a M.S. in soil fertility. Haly came to Texas A&M University in 2010 for a Ph.D. in soil physics with Dr. Cristine Morgan. Her graduate work focused on measuring and modeling soil shrinkage in cracking clay soils to improve runoff predictions in hydrology models. She was able to develop new instrumentation to improve shrinkage measurements in these soils, and built and validated a soil crack volume model.
August Graduates

Jennifer Peterson, PhD in Agronomy

Wail Alsolami, Masters in Molecular and Environmental Plant Sciences
Rasha Al-Azzawi, Masters in Plant Breeding
Brian Pfeiffer, Masters in Plant Breeding
Bryan Simoneaux, Masters in Plant Breeding
John Gill, PhD in Plant Breeding
Yun-Hua Liu, PhD in Plant Breeding
Sean Thompson, PhD in Plant Breeding
Xiuting Zheng, PhD in Plant Breeding
Benjamin Davies, Masters in Soil Science
Madahy Romero, PhD in Soil Science

Undergraduates:

Seth Prochaska, Turf Grass Science
Mark Racciato, Plant and Environmental Soil Science, Crops
Congratulations to **Silvano Ocheya** for his hard work and research as a doctoral student, and for receiving the International Travel Bursary Award for Tomorrow’s Leaders. Silvano will attend the Agricultural Bioscience International Conference in Saskatoon, Canada in October. Two more SCSC graduate students were invited to give presentations at the ABIC in Saskatoon. **Yun Hua Liu, who will received her PhD in August with Hongbin Zhang and Wayne Smith, and Charlie Dowling, a PhD student with Russ Jessup**, received ABIC invitations and travel awards. Yun Hua will present on her work involving gene networks affecting quantitative traits and Charlie will address phenomic and genomic efforts to improve bioenergy crops (grasses) adapted to marginal lands as related to global food and energy security.

Congratulations to **Amanda Hulse for being selected as a 2014 College of Agriculture and Life Sciences Dean’s Outstanding Achievement Award for Graduate Research.** The Dean’s Outstanding Achievement Awards are the highest awards in the College of Ag and Life Sciences presented to faculty, staff, and students.
Congratulations to Dr. David Stelly for his committee appointment.
The National Research Council (NRC) has proposed a committee slate for its new study, “Genetically Engineered Crops: Past Experience and Future Prospects.” The committee was drawn from nominations submitted, considering the full range of expertise and experience needed to address the study’s statement of task.

Congratulations to Gaylon Morgan for receiving an award honoring his 10 years of service with Texas A&M AgriLife Extension!

Congratulations to Dr. Terry Gentry! The Bacterial Source Tracking Team has been selected to receive a 2014 College of Agriculture and Life Sciences Dean’s Outstanding Award for Interdisciplinary Research!
FAC Update – August 21, 2014

The SCSC Faculty Advisory Committee (FAC) is currently soliciting nominations for 2 new members to replace Drs. Mark McFarland and Scott Finlayson whose terms end this month. If you would like to nominate faculty members (including yourself) for service on the FAC, please email their names to Terry Gentry (tgentry@ag.tamu.edu) by Friday, September 5. A faculty vote on the new FAC members will be held in early September. The 3-year term for the new FAC members will begin in September 2014. Please contact me, Jim Lukeman, or Dr. Baltensperger if you have any questions about the nomination process or the FAC.

SOIL & CROP SCIENCES

FALL HARVEST 2014

BASH

October 10th

7-10 pm

WELLBORN COMMUNITY CENTER
WELLBORN, TX
U.S. education provides stepping stone to agricultural advancement in developing countries

Silvano Ocheya is a long way from home. But it won’t be long before he returns to Kenya or another developing country in need of the new skills he’s learned in the U.S.

“I hope to work in a developing country; not necessarily my country, but I have a passion to help make change in people’s lives. That’s my focus,” said Ocheya, a Texas A&M University doctoral student in College Station.

Ocheya spent the summer in Amarillo harvesting wheat and gathering data for his dissertation project, which he will complete in about 18 months under advisors Dr. Shuyu Liu, Texas A&M AgriLife Research small grains geneticist in Amarillo, and Dr. Amir Ibrahim, AgriLife Research wheat breeder in College Station.

He grew up in Kenya near Kisumu on a farm run by his mother after his father’s death in 1990. There are five boys and three girls in his family, and all of them advanced to the college level. But Ocheya will be the first with both a master’s and a doctoral degree.

His undergraduate degree was earned at the University of Nairobi, followed by an internship at the International Maize and Wheat Improvement Center, or CIMMYT, in Kenya. He pursued a master’s degree in genetics and plant breeding at the same university and returned to the center for four years.

“My mentor was Dr. Dan Makumbi, an alumnus of Texas A&M University,” Ocheya said. “He encouraged me to pursue my education further, and recommended I apply for Monsanto’s Beachell-Borlaug International Scholars Program.”

Ocheya worked on corn with Makumbi. But he said Makumbi urged him to work on wheat while in the U.S. so he could learn something different. Wheat, corn, cassava and sorghum are the daily food staples for most farmers in Africa.

“Working on those crops will make the biggest impact,” he said. “With these crops, the farmers can have food and make surplus to sell, so they can buy other things or take the kids to school. Beyond primary school, education costs money in Kenya.”

Ocheya’s project addresses issues dealing with drought and rusts, which are major problems for wheat in the U.S. and many African countries, including Kenya.

“We import two-thirds of the wheat consumed in Kenya,” he said. “So production-wise, we need to pull ourselves up. But there are many issues with drought. Farmers rely solely on rainfall. We need to breed wheat that is drought tolerant but also disease resistant. Stem rust is the primary yield-limiting factor for us.”

Ocheya said in his doctoral studies they are combining drought tolerance and rust resistance from U.S. and Kenyan wheat cultivars to find traits that will work under the Kenyan conditions. He said the training here is different, because the combination of coursework and research “trains you to be a more well-rounded scientist. And, the availability of facilities completes your training.”

It is that well-rounded education that will be needed in the future, he said.

“We just need to do simple things,” Ocheya said. “The U.S. has improved their yields by doing simple things: breeding in resistance and taking it to the farmer. We need to do that in these developing countries – take the technology to the farmer.”

Ironically, “take it to the farmer” was the last thing the late Dr. Norman Borlaug, Nobel Peace Prize laureate and wheat breeder at both CIMMYT and Texas A&M, said, according to Ibrahim.

Liu said Ocheya, in addition to the three-year scholar program, was selected this year as one of 14 graduate students worldwide recognized as a “Borlaug next generation delegate.”

“His success in his research is built on the success of the wheat improvement team at Texas A&M AgriLife Research,” Liu said. “His advising committee is a strong team, including wheat breeders, geneticist and stress physiologist.”

Ocheya said in the U.S., the system works right. The government helps the process instead of hindering it and everyone seems to work together.

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He said there is a time lag in technological advancements in the developing countries, adding, “the technology people in these countries are trying to implement now has already been replaced in the U.S. We need current technology to address current problems.”

Often in developing countries, he said, the problem is a failure to get new technology to the fields. There is a missing connection between the scientists and Extension agents. While phone app use is growing, most farmers still don’t have knowledge of computers and don’t know where to get information.

The Ministry of Agriculture operates the Extension program in Kenya and every county has an agent. But it is different from the U.S. where the agents travel and there is a lot of contact, Ocheya said.

In Kenya, the agents have limited capacity to visit the farms, he said. The farms are small, averaging 1 acre, so there are many more people to educate. And many are run by women, like his mother, who rely on what they produce to feed their families and provide a livelihood.

Ocheya knows he wants to breed new varieties to respond to the issues of climate change, such as drought. But he also knows he can only be successful if there are more people involved to ensure the varieties he develops get to the farmer.

“If they don’t, it is a waste of time,” he said. “I know if I go back and try to work alone, I will fail. I will need everyone to be on board. Extensionists, pathologists and entomologist – everyone has to be on board to make sure the technology reaches the farmer.

“We need varieties that respond well to enhanced agronomic practices; but the farmer, at the end of the day, needs a full complete package of education. If he or she grows the best variety, but doesn’t know how much fertilizer to apply, it will fail again.”

Ocheya said technology such as Round-up Ready would allow intensive farming systems. Additionally, the farmers need high density crops that provide more plants per acre to increase the production, since the farm size is so small. The farmers also need to learn to prioritize the use of their resources to make an impact.

So while his work may not take him home when he graduates, Ocheya is sure it will take him where he is needed.

“I believe my skills are not needed in the U.S. at this time,” he said. “The yields in the U.S. are over 5 tons per hectare. But in Africa, for instance, it is 2 to 3 tons per hectare. So every year they have to import wheat. And with oil prices going up, that is not sustainable at all. This is where I am needed.”
Retired soil scientist doing what some said couldn’t be done – growing alfalfa in East Texas

After nearly three decades of research with Texas A&M AgriLife Research, soil scientist Vincent Haby retired in 2009 and bought a 220-acre ranch about 20 miles from the agricultural experiment station in Overton where, among other projects, he conducted groundbreaking research on growing alfalfa in East Texas.

Now Haby is practicing what he preaches. He’s growing alfalfa where it was once widely believed it would never grow, and he’s already had three cuttings, producing close to 500 50-pound bales with each of his last two harvests. Not bad for a forage that people long believed couldn’t be grown in the region.

Haby’s research into growing East Texas alfalfa started in the early 1980s when he was invited to speak as a researcher to Extension agents about some possible alternative crops in the region. He had worked with alfalfa in Montana and mentioned that as a possibility in his presentation to the Extension agents.

Dr. Richard C. Potts, whom Haby knew from his undergraduate days, came up to him after the talk and said he had often wondered why they couldn’t grow alfalfa in East Texas.

“I admired that old man, so I jumped into it,” Haby said. “We thought the East Texas bottoms would be a good place because it had good, rich soils, but they held too much water. Alfalfa can’t tolerate wet feet.”

From there, Haby moved his experiments to sandy loam with reddish to yellow clay; gray clay is too wet, he warns. He and his team grew alfalfa in Bermudagrass fields at four different locations with seven-, 14-, 21- and 28-inch spacings, respectively.

“The alfalfa outdid the Bermuda grass — shaded it out — even at the 28-inch spacings,” Haby said.

The next step, partly financed by a grant from USDA Sustainable Agriculture Research Education (SARE), involved research studies on pH, phosphorous rates and eight different soil types. He did grazing studies on five different farms, the largest being eight acres. Alfalfa flourished at four of the sites; the fifth was too wet.

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“From that, we knew we were onto something,” Haby said. “We went to the NRCS soil manuals where we could look at a description of the soils to see if it was well-drained and its other characteristics.”

From that research, Haby was able to report that about a third of the soils in East Texas were suitable for growing alfalfa. He found that alfalfa needs a native soil pH above 7.0, or acid soils limed four-to-six inches deep. The land needs to be level to gently sloping, well aerated and drained. The soil has to be responsive to applied nutrients like phosphorus and boron. Four pounds of actual boron per acre on soil limed to a pH of 7.0 produced more than two tons of alfalfa dry matter.

Haby notes that one of the advantages of growing alfalfa is that it doesn’t need any added nitrogen. Rhizobium bacteria inoculated on the roots of alfalfa converts nitrogen in the air to the kind of nitrogen that is needed for plant growth, he said.

“The rhizobium bacteria infects roots to two inches deep and forms nodules that take (nitrogen) directly into the plant,” he said. “That’s one of the great things about alfalfa.”

Another great thing for the successful grower is that it brings a premium price on the market, where it is especially popular with horse owners. Bales weighing 75-80 pounds are going for about $12 a bale in East Texas, Haby said. He’s selling his 50-pound bales for $8.

Haby said the number one question he gets from horse owners concerns blister beetles, which harbor a toxin called cantharidin. Horses are highly susceptible to the toxin, but not through being bit. The blister beetles like to feed on alfalfa flowers and crops. The harvested hay is contaminated by the mutilated beetles.

So how many blister beetles does it take to kill a horse? There is no definite answer, but estimates from various universities generally put the number at between 25 to 300, depending on concentration of cantharidin — different species carry different levels of the toxin — and the size and overall health of the horse.

Blister beetles have never been an issue for Haby, either in his research or on his recent cuttings.

“In all the years I’ve spent developing the techniques, I’ve never seen a single blister beetle in this region,” he said. “That’s 24 experiments where they have never showed up.”

He said blister beetles are common in alfalfa elsewhere, including parts of Texas, but he has never encountered one in his studies.

For more information on growing alfalfa in East Texas or to purchase some that Haby has grown, contact Haby at sdr1@yahoo.com. You can read more about his research on alfalfa in East Texas at http://overton.tamu.edu/topics-new/forages/soil-and-crops.