Congratulations to our winter 2014 graduates. It is always great to see a new group moving forward to exciting careers. A special note of congratulations to all of our recent award winners. We had several recognized at the recent Texas Plant Protection Conference including: the posthumous recognition of Dr. Tom Cothren as the Borlaug Award recipient for his outstanding career accomplishments in Crop Physiology.

This has been a very active month for our faculty with major presentations at the Amarillo Farm and Ranch Show, the Cotton State Support meetings in Lubbock, and the Texas Turfgrass Association meetings in Fort Worth. The District 8 Extension agents helped facilitate an online session at the District 8 Farm and Ranch Seminar with more than 500 participants. We are rapidly moving to reduce our travel through the use of new electronic delivery systems.

I also had the opportunity to participate in the CSSP (Council of Scientific Society Presidents) in Washington, DC. As president of the Crop Science Society of America I chair a subcommittee at CSSP to bring in speakers on world population and food security issues, as well as serving on their board of directors. Today was my last official meeting as president of CSSA and I want to thank all of the Soil and Crop Sciences Society of America staff and faculty for their support while I served in this role.

As past president, I will also serve on the board for CAST and will be advising on CAST issue papers for the future. If you have suggestions I am anxious to hear about ideas to focus on our science issues.

A special thanks to Mrs. Mary Lyles. She had several ideas for donations to our department in memory of her late husband, Bill Lyles.
These gifts always provide special meaning for those who worked with the remembered. The new year will start with a bang. Don’t forget to register for the AgriLife Conference in January. Please plan to participate in our departmental awards meeting during this conference on Wednesday, January 7th.

We recognize that several will need to participate in the Beltwide Cotton Conference at the same time. We expect that they will represent us well as we represent them here at the AgriLife Conference. Many will be heading to San Diego for the PAG meetings shortly after, and our annual departmental review will also be in January. We will be at the initial stages of our external review of the department and getting a new semester underway.

Thanks to each of you the department has had a very good year, and now it is time to celebrate with family and friends. Wishing you the very best over the holidays as we enter 2015.

David

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Upcoming Events

- **December 19 - 7 am**  SCSC Graduation Breakfast
- **December 19 - 9 am**  SCSC Graduation
- **December 24-Jan 2**  Christmas Holiday
- **January 5-7**  Beltwide Cotton Conference
- **January 5-9**  AgriLife Conference
- **January 7**  Departmental Awards
- **January 10-14**  International Plant & Animal Genome Conference
- **February 19**  Texas A&M Plant Breeding Symposium
Congratulations to **William Brandon Smith** who won third place for his oral presentations in the C-6 division of CSSA in Long Beach, CA!

Congratulations to **Lauren Pitts** who was awarded first place for her poster at the 2014 ASA, CSA, SSSA meetings! Lauren is an MS Soil Science graduate student with Dr. Jacqui Peterson.

Congratulations to **Kirstin Hein** who was awarded first place for her poster on urban streams at Water Daze 2014! Kirstin is an MS Water Management and Hydrological Science graduate student studying with Dr. Jacqui Peterson.

Congratulations to SCSC undergraduate student, **Jose Santibanez**, who was awarded first place for his poster on urban ponds at Water Daze 2014!
TPPA Awards

THE TPPA NORMAN BORLAUG LIFETIME ACHIEVEMENT AWARD was given posthumously to Dr. Tom Cothren. Cothren’s wife Lynda and son Denton Cothren accepted the award. Also pictured are (left) Chairman Ray Smith and TPPA President Dale Mott.

Chairman Ray Smith presents TPPA President Dale Mott with a recognition plaque.

JOSH MCGINTY receives the TPPA Graduate Student Award.
SILVANO ASSANGA OCHEYA receives the TPPA Graduate Student Award

THIRD PLACE POSTER winner, Blake Baumann, Department of Soil and Crop Sciences, Texas A&M University, and (right) Dr. Betsy Pierson, TPPA incoming vice president. Poster title: “Influence of Application of Day on Cotton Tolerance and Entire-Leaf Morningglory Control from Glufosinate.”

DALE MOTT, TPPA president and Texas A&M AgriLife Extension specialist, accepts the award for third place prize in the Pest Identification Contest from Barron Rector, Texas A&M AgriLife Extension Service range specialist.
Congratulations to our December graduates!

We will have a celebratory breakfast for our graduates December 19th at 7 a.m. in Heep 440!

Ahmed Attia Mohamed, PhD, Agronomy
Joshua Allan McGinty, PhD, Agronomy
Dustin Walker Herb, MS, Plant Breeding
Benjamin Tyler Meritt, MS, Plant Breeding
Jiale Xu, MS, Plant Breeding
Dianna Kathleen Bagnall, MS, Soil Science
Michael Benjamin Alexander, PhD, Soil Science
Katie Rothlisberger Lewis, PhD, Soil Science
Ray Herbert Kamps, PhD, Water Management and Hydrological Science
Congratulations to our December graduates!

Water issues featured in TPPA conference opening session

Jim Bordovsky, Texas AgriLife Research, and Dale Mott, AgriLife Extension and TPPA president, check the agenda for the annual TPPA conference at the Brazos Center in Bryan, Texas. The 26th annual conference focused on water issues.

welcoming remarks to the near capacity crowd at the Brazos Center in Bryan, Texas.

Water is a salient issue for the times. Sustainability is crucial, he added, as is maintaining the economy, protecting the environment and “feeding the world. Drought is still an issue in Texas and will continue to be an issue.”

Dugas said technology, including improved irrigation and production methods as well as new varieties, will be critical for efficient water management.

Travis Miller, interim director for state operations for Texas A&M AgriLife Extension, put today’s drought issue into a historical perspective. “We’re not talking about water but the lack of water,” he said. “Drought is no stranger to Texas.”

He said tree ring observations show severe periods of drought dating back almost 500 years. “Historically, we’ve had droughts that far exceed what we’ve seen so far, so we need to be aware of the possibilities.”

That’s a sobering thought considering the staggering cost of the latest drought cycle, more than $22 billion in ag enterprise losses. He said the beef industry was hit particularly hard and will be years recovering. In 2005, Texas cattlemen reported 5.35 million head of cattle. In 2014 that number had dropped to 3.91 million, a 27 percent decrease since 2005. He said “irreparable damage” to forage across the state may limit expansion.

“And that $22 billion loss to ag may be small compared to the ripple effect across the economy,” he said.

Uvalde, Texas, farmer J. Allen Carnes offers a personal perspective on what limited water supply means to agriculture. Instead of planting crops that fit marketing objectives, he’s had to switch to crops that would produce on the amount of water available. That’s meant cutting cabbage production from 1,400 acres down to 544 and increasing winter wheat from 800 to more than 1,800 acres.

Carnes was the final morning speaker at yesterday’s opening session of the 26th annual Texas Plant Protection Association Conference.

Water was the conference focus, and Carnes joined university and industry speakers to delve into the challenges agriculture faces in a state and region where multi-year droughts have caused heavy economic losses, and the potential for continuing drought, increased competition for water and rising production costs pose huge obstacles to farmers, ranchers and the industries that support them.

“TPPA has always attracted diverse groups to discuss salient issues,” said Dr. William Dugas, acting vice chancellor and dean for Texas A&M AgriLife, in
Texas to benefit from sending new wheat traits to Africa

Dr. Shuyu Liu, Dr. Amir Ibrahim, Dr. Jackie Rudd and Dr. Qingwu Xue – all Texas A&M AgriLife Research wheat program leaders – have been working to strengthen wheat varieties and increase yields and drought tolerance for the Texas industry. Ibrahim said this project will bring genetic diversity to the Texas A&M wheat breeding program.

“One of the biggest strengths of our program is its very diverse genetic base,” Ibrahim said. “This will greatly benefit Texas wheat producers as it brings new genes of resistances to pests and diseases that are not even here yet,” he said.

Ibrahim indicated that what is referred to as the gene-for-gene concept is very important in wheat breeding. “For every gene of resistance, the pathogen or the pest will try to develop a gene of virulence. Hence, it is important to be ahead of the pest by enriching germplasm diversity, not only for the prospects for incremental yield increase, but more importantly for maintaining host plant resistance,” Ibrahim said.

But it is a Texas A&M University doctoral student they advise, Silvano Ocheya, who is taking their work and carrying it across continents in his thesis project.


“I believe this research is vital and will link research in the U.S. and Kenya,” Ocheya said. “I hope it will create a scientific community between developed and developing countries, and this will enhance germplasm flow as well as information between the two countries.”

Ocheya has been named a Fellow for the Norman E. Borlaug Leadership Enhancement in Agriculture Program of the U.S. Feed the Future Borlaug 21st Century Leadership Initiative and is provided U.S. Agency for International Development funding to cover travel expenses for his research in Kenya, said Liu, an AgriLife Research small grains geneticist in Amarillo.

“This study should add to the foundation required in tackling drought stress across the world,” Liu said. “The SNPs associated with drought tolerance will be used in the marker-assisted breeding to move superior traits from Texas A&M AgriLife TAM wheat into Kenyan spring wheats.”

In addition to Ocheya’s U.S. advisors, Ocheya is working with Dr. Peter Njau at the Kenya Agricultural Research Institute, or KARI, and Dr. Sridhar Bhavani at the International Maize and Wheat Improvement Center in Mexico, more commonly referred to as CIMMYT.

Ibrahim, an AgriLife Research wheat breeder in College Station, said the partnership between the researchers in the U.S., CIMMYT and KARI will be valuable and provides expansion of testing sites and technology sharing.

This study will provide a platform for knowledge sharing through a student exchange program where students from developing countries can visit schools in the U.S. and learn the experience of plant breeding in a developed country,” Ibrahim said.

Cont’d on next page
Rudd, an AgriLife Research wheat breeder in Amarillo, said this is a truly collaborative project. “The Kenya wheat program will gain drought tolerance traits from our Texas wheat and we will gain new sources of rust resistance from the African wheat.”

Ocheya said the development of improved wheat varieties with high yield and resilience to drought stress is much needed due to volatile climatic changes, scarce water resources and competing needs for water for urbanization and/or industrialization and rapid population increase, particularly in developing countries.

“We are taking a molecular breeding approach to tag important traits regulating drought tolerance in a known drought-tolerant winter wheat developed and released by Texas A&M AgriLife Research,” he said. “The ultimate goal is to increase yield of spring wheat by introducing these traits into durable stem rust-resistant cultivars from Kenya using marker-assisted selection.”

The research is being conducted at KARI/CIMMYT research farms in Kenya and AgriLife Research farms in Amarillo and College Station. The marker-assisted breeding process will be conducted at the Amarillo center.

“We have made a backcross between durable stem rust-resistant Kenyan lines and TAM winter wheat possessing excellent drought tolerance,” Liu said. “The objective is to introduce drought tolerance into the spring wheat cultivars possessing resistance to stem rust. The backcross seed were harvested mid-May this year and seeds will be prepared for planting in Kenya.”

The field testing will be conducted in multiple target environments in Kenya. The planting season in Kenya is in January and note-taking for the target traits will be done in April and May. Ocheya said the results will be relevant to the U.S. and Kenya, as well as other countries across the world where wheat is grown.

Greenhouse and field trials will run concurrently, he said. The greenhouse experiment is being conducted under artificial inoculation with stem rust strains and data will be captured on disease reaction as well as yield and other agronomic traits.

“The AgriLife Research wheat team is looking forward to the results from this international collaboration and hope our research effort can help wheat production in many African countries,” Liu said.
Wishing you and your family a wonderful holiday season and a healthy and peaceful New Year.

THE DEPARTMENT OF SOIL AND CROP SCIENCES

[Signatures]