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Soil and Crop Graduate Organization outgoing and incoming officers. See stories pages 7 and 12
It was raining, AGAIN, in College Station as I departed for Washington D.C. for the Council of Scientific Society Presidents. With all the moisture we have had disrupting our crop management and research in the Brazos Valley, it is difficult to remember that parts of the state are still abnormally dry or suffering from moderate drought conditions. Our large state continually provides new challenges and a wide range of conditions with which agricultural producers must contend.

In addition to unpredictable weather, producers must also contend with the vagaries of the market and political influences like the current trade dispute with China. These things can all affect our business decisions. (See the story on page 11 about expectations for sorghum acres in Texas)

We will be graduating another class this week, and a handful of advanced degree candidates. Congratulations to you all! You will continue to learn and grow as you add experience to the knowledge, leadership, character and life long-learning skills you have gained during your time as a student.

Congratulations to the newly elected officers of the Soil Crop Graduate Organization. This group provides a network of friends and colleagues to help our graduate students navigate the ups and downs of earning advanced degrees. (see more page 7)

Four of our students recently received Senior Merit Awards from the university. Congratulations to you all! (see more on page 6)

Kudos to the Brazos County 4-H Soil Judging Teams for winning the Southeast District 9 Soil Judging contest at both the junior and intermediate levels, and for having the high-point individual at the senior level. Some of our faculty members have children on the teams and others are involved with hosting the event. (more on page 15)

I had the opportunity to lead the Council of Scientific Society Presidents at the spring meeting this year in DC. It provided a great opportunity to explore issues in science including discussions on climate change, vaccines, genetic modifications, pesticide safety and others. We had two sessions on improving the climate for underrepresented scientists across our disciplines. Leaders from Bayer, Amazon and Syngenta shared ideas on preparing the next generation of scientists for the rapidly evolving research frontiers. The winter meeting will focus on reorienting our scientific societies to meet the needs of the next generation of scientists. A special thanks to Congressman Foster from Illinois and Senator Whitehouse from Rhode Island for spending time outlining how several science initiatives are winding their way through the budget process.

As we transition out of the spring semester, we enter the busy time for our Extension specialists. They spend a lot of time on the road during the late spring and summer months attending to research plots and conducting meetings with producers. We appreciate the efforts they make to help inform the public about science-based best management practices. Stories in this newsletter highlight just a few of those programs.

The search for a peanut breeder to work at the Stephenville center continues. We are pleased to know that we will soon be able to augment our staff with another quality researcher. We have other positions we would like to create/fill, and we will know what is possible after the state legislature confirms our budget for the next two years.

An offer has been extended for the bio-photonics candidate and they have chosen our department as their home. We expect the final paperwork to be completed in the near future.

You can support Soil and Crop Sciences research, teaching and extension outreach with your tax-deductible donations.

More Information can be found at: http://soilcrop.tamu.edu/giving/
Congratulations!

to those earning advanced degrees this month!
We wish you all Good Luck in the next phases of your lives!

Agronomy

Jonathan Moreno
Jonathan earned his Master of Science in Agronomy under the supervision of Dr. Ronnie Schnell. His research focused on cropping systems in grain crops. He has accepted a position as a Research Specialist in Dr. Schnell’s program here at TAMU. Jonathan is originally from Penelope, TX. and had earned his Bachelor of Science in Agronomy at TAMU in 2012.

Diana Zapata Rojas
Diana earned her Ph.D. in Agronomy under the supervision of Dr. Nithya Rajan. Her research focus was greenhouse gas emissions and carbon/nitrogen balance. She will remain at TAMU as a Postdoctoral Research Associate in Dr. Rajan’s lab. Diana is from Bogota, Colombia. She earned her Master of Science in Biological and Agricultural Engineering from Washington State University.

Food Science & Technology

Tadesse Teferra
Tadesse earned his Ph.D. in Food Science and Technology under the supervision of Dr. Joseph Awika. His research focused on improving processing stability of sorghum proteins in food processing. He will be returning to his hometown, Hawassa, Ethiopia, to teach Food Science and Postharvest Technology at Hawassa University. Tadesse earned his Master of Science in Food Engineering at Haramaya University before coming to Texas A&M.
Anna Casto

Anna earned her Ph.D. in Molecular and Environmental Plant Sciences under the supervision of Dr. John Mullett in the Department of Biochemistry and Biophysics.

Her research focused on identifying the genes contributing to development and biomass yield in sorghum bicolor.

Anna has accepted a Postdoctoral position at the Donald Danforth Plant Science Center in St. Louis, MO.

Jared Goldman

Jared earned his Master of Science in Molecular & Environmental Plant Science under the supervision of Dr. Scott Finlayson.

He has accepted a position at Bridgeland High School in the Cypress-Fairbanks Independent School District. He will be teaching biology and honors biology classes.

Jared is also planning to continue his education by earning a Master of Education in Curriculum and Instruction at TAMU with an emphasis on science education. He hopes to conduct research on metacognition and innovative science teaching practices.

Joel Arce

Joel earned his Master of Science in Plant Breeding through the distance program under the supervision of Dr. Jane Dever and Steve Hague.

His research focused on the evaluation of mechanical cottonseed delinters for cotton breeders.

Joel is currently working as a researcher in Dr. Dever’s program in Lubbock. He will continue to work there while he explores other options.
Students earning a Bachelor of Science Degree from the Department of Soil and Crop Sciences - May 10, 2019

Kerry Brent Birdwell  
Turfgrass Science

Anthony John Brien  
Turfgrass Science  
Minor in Business

Kyle Gene Davis  
PSSC - Crops emphasis

Preston David DeJong  
PSSC - Crops emphasis

Jose Raul Diaz  
Turfgrass Science

Makayla Leigh Faldyn  
Double major PSSC and Environmental Studies

Caleb Joseph James Ging  
PSSC - Crops emphasis

Daniel Guerrero  
PSSC - Crops Emphasis

Kyle Michael Haverland  
Double major PSSC and Agriculture Communications

Lauren Nichole Hayes  
PSSC - Soil and Water Emphasis

Andrew Joseph Healy  
Double major Horticulture and Turfgrass Science

Sergio S. Jimenez  
PSSC - Soil and Water Emphasis

John Joseph Jordan  
Turfgrass Science

Seth Robert Kehlenbeck  
Double major PSSC and Horticulture

Ryan Yu-Jin Kim  
PSSC - Crops Emphasis

James Bowie Kimberly  
Turfgrass Science

Caitlin Samantha Lakey  
PSSC - Crop emphasis with a Minor in Plant Breeding

Neil Thomas Soto Myers  
PSSC - Soil and Water emphasis

Elek Máityás Nagy  
PSSC - Soil and Water emphasis

Victoria Rivera  
PSSC - Crops emphasis

Nicole Marie Shigley  
Double Major - Horticulture and PSSC - Soil and Water Emphasis

Chandler Simental  
Turfgrass Science

Kaitlin Margarette Tanner  
Turfgrass Science

Reece Jordan Teplicek  
PSSC - Crops emphasis

Braden S. Tondre  
PSSC - Crops emphasis

Michael Payne Whatley  
Double major PSSC - Crops and Agriculture Economics

*PSSC - Plant and Environmental Soil Science

Visitors from China

Plant breeders from the Henan Academy of Agricultural Sciences in Henan, China, visited the department in April.

During the visit, the delegation visited with Soil and Crop Sciences faculty and students, and Dr. Hongmei Miao presented her research on the sesame genome.

Miao explained that while China is a major producer of sesame, they are also the largest importer of the crop. Most sesame is produced in African countries.

Sesame is still primarily harvested by hand to prevent damage to the crop. Miao hopes to breed plants that are better adapted to mechanical harvesting.
Students earning a Minor
from the Department of Soil and Crop Sciences
May 10, 2019

Kyle Austin Chism
Major - Agriculture Systems Mgmt.
Minor - Agronomy
Minor - Business

Christopher John French
Major - Ag Leadership
Minor - Agronomy

Curtis Daniel Hard
Major - Agriculture Systems Mgmt.
Minor - Agronomy

Mason Trant House
Major - Agriculture Leadership
Minor - Agronomy

Joshua Ray Johnson
Major - Horticulture
Minor - Plant Breeding

Marielle B. Kapileo
Major - Ecological Restoration
Minor - Agronomy

Lauren Elise Mielcarek
Major - University Studies
Geography emphasis
Minor - Agronomy
Minor - Business
Minor - Geographic Info. Systems

Sean Louis Paris
Major - Agriculture Leadership
Minor - Agronomy

Daniel John Volleman
Major - Agribusiness
Minor - Agronomy

Noah David Wleczyk
Major - Ag Leadership
Minor - Agronomy

Congratulations!

Many of our undergraduate students have excelled this year in their academics and research areas and have been recognized for those efforts. Congratulations to you all!

Four senior soil and crop students, Lisette Aeschlimann, Kyle Davis, Caitin Lakey, and Nicole Shigley, were selected to receive Senior Merit awards from the Texas A&M University College of Agriculture and Life Sciences (COALS). The Senior Merit award is based on leadership, scholarship and service at the department, college and university levels. It is the highest award given to undergraduates in the college.

Shigley also has been named as the Texas A&M representative to the tri-societies National Student Recognition Program, received the COALS Excellence Fellowship and has been selected to receive the Frank D. Keim Graduate Fellowship from the Agronomy Society of America at the meeting this November.

She has been conducting her research on the effects of tillage practices on soil carbon and microbial dynamics under the supervision of Dr. Peyton Smith.

Ryan Kim, a senior Plant & Environmental Soil Science major, placed first with his research poster at the Agriculture Consortium of Texas Symposium.

Kim did his research in the use of spectral reflectance data to detect diseases and water stress in wheat in Dr. Nithya Rajan’s lab.
As a new slate of officers is sworn in for the Soil and Crop Sciences Graduate Organization (SCGO), it is a good time to look back at the students who organized and led the group through its formative years.

After conducting the first Plant Breeding Symposium, a graduate student planned and run event, a group of plant breeding students commiserated on some of the difficulties of graduate school. How nice it would be, they thought, to have a place to turn for support beyond that which the university could provide.

“We felt at a disadvantage, especially those students from out of state or another country” said Ammani Kyanam, one of the group’s founders. “It can be terrifying to be a long way from home. It is nice to have a connection.”

In mid-2015 Kyanam, Laura Masor, Brian Pfeiffer, Smit Dhakal and other plant breeding students founded the Plant Breeding & Genetics Graduate Student Organization to provide that connection.

They soon realized that there were students with other majors in the department who would benefit from the organization, so the name was changed to the Soil Crop Graduate Organization in 2016 and the group’s constitution was amended to benefit students in all soil and crop science programs.

The SCGO has three objectives, Kyanam stated. To build community (aka have some fun), to provide professional development opportunities and represent the interests of the department’s student body to the university’s Graduate and Professional Student Government (GPSG).

Community

From 20 - 35 graduate students attend the meetings and events. The events range from socials, to group attendance of sports events, to volunteer work. During The Big Event, members of the group volunteered at the Brazos County Food Bank. They recently held a “Paint Night” where about 35 students gathered to create their own masterpieces.

These events provide a sense of family and of belonging that many students miss when they are far from home.

Professional Development

At the monthly meetings invited speakers discuss topics such as networking, how to write a resume, preparing for an interview, or how to write a scholarship essay.

Having a Voice

Since the SCGO has a delegate to the GPSG, they have a platform where their voice is heard. This helps students from throughout the university know what is going on in Soil and Crop Sciences, and helps SCSC students stay connected to the greater university.

Moving Forward

“One of our big challenges is trying to include graduate students with families,” Kyanam said. “Much of what we do is at night, and often later than people with small kids can participate. I hope the new officers can find some activities that will include the families.”

“I was super impressed with the organization when I came in, so I am happy to be able to do my part and lend my skills,” said incoming President Mark McDonald.

“It is a good organization so we are going to try to build on what has already been done,” he said.

The socials are well attended, so he and his team of officers will continue with those, and try to expand it to include family friendly activities.

McDonald also hopes to add career advising to the professional development aspect of the organization. He thinks topics such as how to ask for a salary, or how to succeed in the career world would be a beneficial addition.

“All the new officers are fresh - we have never been officers before - so we have a new perspective and fresh ideas,” McDonald said. “We are also early in our graduate programs so we may have a little more flexibility in our schedules and more time to dedicate to the SCGO.”
The Texas A&M Turfgrass Science team recently hosted members of the United States Golf Association Green Section’s research committee at the Scotts Miracle-Gro Center for Lawn and Garden Research. During the visit, faculty and grad students from the Department of Soil and Crop Sciences provided updates on several multi-year research projects that are currently being funded by the USGA Green Section. Drs. Ben Wherley and Kevin McInnes, respectively Associate Professor and Professor in the Department of Soil and Crop Sciences, are conducting this research with the assistance of their graduate students.

“Data-driven irrigation scheduling for managing sand-capped fairways”
This project, being conducted by Wherley, McInnes and Ph.D. student Reagan Hejl, is a follow-up to a previous USGA-funded study which determined there was no significant quality or performance differences between fairways irrigated 1 day per week vs. 2 days per week. The current study will use data-driven techniques, including wireless sensors and evapotranspiration rates, to help determine the best irrigation practices for sand-capped fairways.

“Evaluation of spent coffee grounds as a turf fertilizer and root zone amendment”
This study, being conducted by Wherley, McInnes and Master’s student Garrett Flores, is evaluating the use of spent coffee grounds as a more sustainable, environmentally friendly alternative to sphagnum peat moss as a soil amendment for golf courses.

“Long-term dynamics and management requirements of sand-capped fairways”
A third project follows a previous USGA study which suggested an optimal sand capping depth of 8 inches. This study, being conducted by Wherley, McInnes and graduate student Will Bowling, will evaluate the long-term changes in performance, soil properties and management requirements created by the sand-capping.

The USGA is also funding several warm-season turf breeding projects being conducted by Dr. Ambika Chandra and others at the Texas A&M AgriLife Research and Extension Center in Dallas.

The USGA research committee includes USGA agronomists from both the south-central and western U.S. regions as well as current and retired university faculty.

Since 1920, the USGA has funded more than $40 million on research projects conducted at universities across the country. Their research program facilitates collaboration with allied associations and government agencies to promote golf course contributions to the environment. The scientific results advance the long-term viability of the game through sustainable resource management and environmental protection.
Dr. Seth Murray recently conducted a whiskey tasting on Capitol Hill as part of a program to help educate legislators on the importance of public agriculture research.

Murray’s presentation was part of the Hill Lunch-N-Learn seminar series sponsored by the National Coalition for Food and Agricultural Research (C-FAR).

More than 100 Congressional staff members had the opportunity to taste three Texas whiskeys as Murray, Associate Professor in the Department of Soil and Crop Sciences and Butler Chair for Corn Breeding and Genetics at Texas A&M University, discussed research he and his graduate student, Rob Arnold, are doing into the effect corn variety has on the flavor.

Arnold is working toward his Ph.D. in Plant Breeding through Texas A&M’s distance program while working as the head distiller at Firestone & Robertson Distillery in Fort Worth.

Staffers had the opportunity to taste F&R’s commercially available “TX” whiskey, and two samples which had been aged for a year and a half in matched oak barrels. One of the matched samples was made from a TAMU experimental hybrid grown in Burleson County and the other from a commercial corn variety produced in Hill County.

“The staffers liked the whiskey, but more importantly they thought the flavors of the two matched samples were very different,” Murray said. “This is great because it shows that different corns do make a difference.”

Murray also noted that seasoned whiskey drinkers preferred the TAMU corn while the staffers who do not like whiskey preferred that made with commercial corn.

National C-FAR hosts the Lunch-N-Learn presentations to help staffers appreciate the importance of food and agriculture research and to facilitate more informed staff recommendations to members of Congress about food and agriculture research and education funding.
Texas A&M AgriLife Research wheat nursery plots near Bushland will be a stop during the field tour. TAM 115 strips are pictured here on the left and TAM 205 strips on the right. (Texas A&M AgriLife drone photo by Shannon Baker)

Texas A&M AgriLife is trying something different in the Panhandle this year; it will take the semi-annual wheat field day on the road May 22, organizers said.

The free event will begin by boarding the bus at 7:30 a.m. at the Porter Wheat Building at the Conservation and Production Laboratory west of Bushland. The lab is operated by Texas A&M AgriLife Research and the U.S. Department of Agriculture Agricultural Research Service.

“Traditionally, we would stay right on the research station,” said Dr. Jackie Rudd, AgriLife Research wheat breeder, Amarillo. “But this year, we want to reach out to more producers and industry associates by taking the message from our wheat breeders, agronomists and other specialists to them in actual farmer fields.”

The tour will feature different management and input practices at three of the High Plains variety trial field sites and a triticale field, said Dr. Jourdan Bell, Texas A&M AgriLife Extension Service agronomist, Amarillo.

After visiting the AgriLife Research wheat nursery at Bushland, those who want to ride the bus will head to high-input, irrigated yield trials and a triticale field near Dalhart, followed by dryland yield trials near Groom.

The bus will return to Bushland by 6 p.m. Seats are limited, so those planning to ride should call 806-677-5600 to reserve a seat on the bus.

Texas Department of Agriculture continuing education units will be offered at the Dalhart and Groom stops. For more information or specific field locations, contact AgriLife Extension agents Mike Bragg, Dallam County, 806-244-4434, or Jody Bradford, Carson County, 806-537-3882.

 Breakfast burritos and coffee will be provided at Bushland. Those riding the bus will receive nutritional snacks made by AgriLife Extension family and community health agents as well as a boxed lunch. Sponsors include Texas Wheat Producers, WestBred, Syngenta and Warner Seeds Inc.

At each stop, Rudd will introduce the new TAM wheat varieties, TAM 115 and TAM 205. A drone demonstration, time and weather permitting, will be provided by Shannon Baker, AgriLife Research associate, Amarillo.

In addition, wheat trivia will be provided on each leg of the bus trip by Darby Campsey, Texas Wheat Producers director of communications and producer relations, Amarillo.

Other program topics and speakers, as well as estimated times, include:

**Bushland stop, 7:30-9 a.m.:**
- Breeder variety trials, Rudd and other breeders or seed company representatives.

**On the bus to Dalhart:**
- Milling and baking qualities for flour and whole-wheat products, Dr. Audrey Girard, AgriLife Research associate research scientist, College Station.
- Panhandle Milling business/operations, Sara Ballou, Panhandle Milling grain merchandiser, Minneapolis-St. Paul, Minnesota.

**Dallam County stop, 10:30 a.m.-noon:**
- Variety trials in a high-input, irrigated production system, Dr. Clark Neely, AgriLife Extension state small grains specialist, College Station, and seed company representatives.
- Wheatlage trial, seeding rate trial, Bell.
- Fungicide considerations for irrigated wheat, Dr. Ken Obasa, AgriLife Extension plant pathologist, Amarillo.

**Triticale field near Conlen, 1-1:30 p.m.:**
- Triticale variety development, Jason Baker, AgriLife Research senior research associate, Amarillo.
- Nutritional value of wheat and triticale silage, Dr. Juan Pineiro, AgriLife Extension dairy specialist, Amarillo.

**On the bus to Groom:**
- Wheat genetic research, Dr. Shuyu Liu, AgriLife Research wheat geneticist, Amarillo.
- Linking Texas A&M’s wheat breeding program to seed companies, Lileen Coulloudon, Texas Foundation Seed Service, Vernon.
- Wheat drought research, Dr. Qingwu Xue, AgriLife Research crop stress physiologist, Amarillo.
- Entomology concerns in wheat, Dr. Ed Bynum, AgriLife Extension entomologist, Amarillo.

**Groom stop, 4-5 p.m.:**
- Dryland variety trial, Rudd and other breeders, seed representatives.
- Wheat seed technology, IndigoAg representatives.
- Seeding rate trial, Bell.
- Seed treatment trial, Obasa.

For more information, contact Shannon Baker at Shannon.baker@ag.tamu.edu or 806-677-5639.

By: Kay Ledbetter
Sorghum acres are expected to decrease amid excellent growing conditions because of an ongoing trade dispute, said a Texas A&M AgriLife Extension Service expert.

Dr. Calvin Trostle, AgriLife Extension agronomist, Lubbock, said the U.S. Department of Agriculture prospective plantings report estimated 1.35 million grain sorghum acres to be planted in Texas in 2019. Texas sorghum producers planted 1.55 million acres in 2018 following a USDA projection of 1.6 million acres for the state.

Trostle said the 13 percent projected decrease is related to the ongoing trade dispute with China. Texas has typically produced around 25 percent of U.S. sorghum exported to China, about $209 million annually.

“Many Texas producers are concerned that the trade dispute could cut up to $1 per bushel off of domestic prices,” he said. “We send so much sorghum to China, the sooner the dispute is resolved the better.”

Trostle said the fact that nearly all the state, including parts of the High Plains that were experiencing drought conditions, have a good, deep soil moisture profile bodes well for growers. He doesn’t want to jinx the 2019 growing season, but said conditions look excellent so far.

Some producers are still hesitant to plant sorghum because of disastrous sugarcane aphid infestations in 2014 and 2015, Trostle said. But he said plant hybrids introduced to combat the pest, earlier planting dates, proper crop monitoring, treatments and beneficial insects have mitigated much of the pest’s impact since.

“Their impact has been sporadic the last few years,” he said. “Around 25 percent of Texas sorghum acres are planted with sugarcane aphid-tolerant varieties and growers are more vigilant in their monitoring. That has reduced their impact to the point some producers believe we have them whipped. But producers still need to be wary because Mother Nature can humble you.”

Trostle said sorghum plants in South Texas have reached at least the six-to-seven leaf stage with some fields flowering. Sugarcane aphids were noted in those fields with a few adults and newborns at low levels.

“That’s a dramatic change,” he said. “Probably over half the acres in South Texas were recommended for spraying at this point in 2014.”

Along the Coastal Bend, Trostle said sugarcane aphids have been scouted in Johnsongrass but no reports of the pest in sorghum fields. Most sorghum in Central Texas has emerged, and High Plains sorghum plantings were expected to begin in earnest soon.

“This is one of those one in eight years or one in 10 years that makes farmers eager to get their summer crop in the ground,” he said.

Concerns regarding the ongoing trade dispute with China could hold down sorghum production despite this year’s excellent growing conditions. (Texas A&M AgriLife photo by Beth Ann Luedeker)

Sugarcane aphids have had a much lower impact this year, partially due to producers planting aphid tolerant sorghum varieties. (Texas A&M AgriLife Photo by Kay Ledbetter)

Sorghum acres expected to decrease despite excellent growing conditions

By: Adam Russell

Awards in the Ecology of Soil Carbon Lab

Dr. Peyton Smith and her Research Associate, Katherine Quinonez, were recently recognized for their superior work.

Smith received a Southeastern Conference Faculty Travel Grant to travel to the University of Tennessee - Knoxville to collaborate with Dr. Stephanie Kivlin, Asst. Profesor of Soil Microbial and Ecosystem Ecology.

Quinonez was awarded the College of Agriculture and Life Sciences (COALS) Lechner Scholars Fellowship and the Diversity Excellence Fellowship. She will be pursuing her doctorate under the supervision of Smith with a research focuses on unlocking the untapped potential for carbon sequestration.

More

Katherine Quinonez in the field in Costa Rica.
New student worker joins the business office

As the semesters change, so change the faces you see in the Soil and Crop Sciences business office.

Kaleigh Evans is the newest student worker to join the department. She is a junior Special Education major.

Her big smile is sure to be a welcome sight to visitors who walk through the door.

Welcome to the Department, Kaleigh!

New Officers Elected for SCGO - Soil Crop Graduate Organization

A new slate of officers have been elected for the department’s graduate student organization - SGCO.

The new officers will lead the organization for the 2019 - 2020 school year.

Officers are: Mark McDonald, President
             Jennifer MacMillan, Vice President
             Rahul Raman, VP - Finance
             Rohith Vulchi, VP - Comunications
             Aniruddah Maity, VP - Programs
             Promod Pokhrel, GPSC Representative
             (Graduate & Professional Student Government)

For more information about SCGO see the article on page 7

5th Annual Aggie Turf Cup

The 5th Annual Aggie Turf Cup was held May 1st at the Bryan City Golf Course.

The two-man scramble golf tournament is a fun way to end the semester and to build comradery among Turfgrass Science students and others.

“The spring rains had the course in really good condition this year,” said Dr. Ben Wherley, Associate Professor of Turfgrass Science in the Department of Soil and Crop Sciences.

The winning team gets their name inscribed on the Aggie Turf Cup - a perpetual trophy that remains at the Scotts Turf facility. This year James Kimberly and Nick Patschke topped the field to earn their spot on the trophy.
Just as temperatures begin to heat up and lawns begin to seemingly beg for water, Texas A&M AgriLife faculty were recognized at a patent award banquet for their irrigation runoff mitigation system.

With water waste a growing problem nationwide, an interdisciplinary team of engineers, irrigation researchers and turfgrass experts have spent the past two years designing a solution to conserve strained water supplies in municipal landscapes.

Leading the invention were Dr. Ben Wherley, Texas A&M AgriLife Research turfgrass ecologist, and Dr. Jorge Alvarado, Texas A&M University department of engineering technology and industrial distribution professor, both in College Station.

Other team members on the project were Dr. Richard White and Jim Thomas, both retired from Texas A&M’s soil and crop sciences department; Dr. Casey Reynolds, formerly with AgriLife Research; Dr. Fouad Jaber, Texas A&M AgriLife Extension Service engineering specialist, Dallas; and Dean Tate and Junfeng Men, both former engineering students.

The team’s objective was to design a reliable, durable and low-cost Landscape Irrigation Runoff Mitigation System, or LIRMS, that could minimize irrigation runoff losses from residential or commercial landscapes.

Feedback control systems for automated irrigation systems have been limited to soil moisture sensors, weather-based evapotranspiration controllers and rain sensors, Wherley said. A need existed for a system to control scheduled irrigated delivery based on detected irrigation-water runoff.

“In a series of tests comparing LIRMS-controlled irrigation versus industry standard irrigation practices at our runoff measurement facility, the LIRMS was able to reduce landscape runoff by up to 50% during a typical 1-inch irrigation event,” he said.

LIRMS quickly detects and responds to the early stages of runoff, pausing irrigation and generating an automated cycle soaking through the duration of the allotted run period, thus mitigating significant runoff fluxes, Wherley said.

With LIRMS control during an irrigation event, 30 minutes of irrigation may require a few hours to apply, depending on the potential for runoff in a given landscape, he said.

“However, the result is more water ending up in the soil, and less in the storm sewers,” Alvarado said.

The LIRMS system detects flow of water through a boundary, which may be a curb or the junction of two adjoining properties, he said. A controller is operatively coupled to the irrigation system and the sensor. Responsive to the sensor detecting flow of water through the boundary above a predefined threshold, the controller signals the irrigation system to pause irrigation.

“We know urban and/or municipal water use will continue to represent a significant portion of overall water demand in Texas, especially given the rapid pace of urban growth in the state,” Wherley said. “And while most municipalities prohibit irrigation runoff, enforcing it is a challenge.”

Both Alvarado and Wherley said there is still room for improvement in the system.

“Our future efforts will seek to improve efficiency of the system in terms of recognizing appropriate lengths of pause periods based on ambient soil moisture, soil texture, slope and other factors by using artificial intelligence to simply recognize when soil saturation has been achieved based on the runoff dynamics,” Alvarado said.

“As population growth places greater strains on potable water, we believe LIRMS has enormous potential to help water conservation efforts for communities throughout the country,” Wherley said.

LIRMS is composed of a sensor as well as a controller and these would be installed by a professional irrigation contractor when a new system is installed, or as an add on to an existing irrigation system, he said.

“Since no company has licensed the technology yet, the devices we have now are simply prototypes,” Wherley said. “A professional company might improve the device and make it look completely different than it does now. But our patent covers any type of system that controls irrigation in response to detected runoff.”

The product is available for licensing through Texas A&M’s Technology Commercialization website https://tinyurl.com/y2d3wxhe.

The Texas A&M team monitors the irrigation control manifold at the testing facility with engineering students. (Texas A&M AgriLife photo)
The majority of planted Texas corn acres have emerged amid good soil moisture profiles to start the growing season, said a Texas A&M AgriLife Extension Service expert.

Dr. Ronnie Schnell, AgriLife Extension agronomist in the Department of Soil and Crop Sciences, said the Texas corn crop started late in parts of the state, but growing conditions have planted fields off to a good start.

“Plantings were behind schedule two to three weeks in the upper Coastal Bend and Central Texas due to wet weather, before drier conditions in late March allowed producers to catch up,” he said. “Cooler temperatures have also delayed planting for some producers.”

The U.S. Department of Agriculture’s National Agricultural Statistics Service Prospective Planting report estimated 2.15 million acres would be planted in Texas this year. The report’s estimate represents a 50,000-acre reduction in corn acres for the state compared to last year.

The USDA reported 70 percent of Texas corn was planted with more than 60 percent of those acres emerged. A majority of those acres are in “good” to “excellent” condition so far.

Planted and emerged acres indicate producers in the High Plains and Panhandle have made progress, Schnell said. The regions typically account for 45 percent of Texas’ corn acres.

Schnell said some producers in wetter areas may have chosen options like cotton for their acres over planting corn late. Others held out and planted corn hoping good moisture and favorable weather would lead to good yield potential.

In-season field operations have been challenging as producers wait for fields to dry, Schnell said. If rains continue, nitrogen applications could be delayed and there are concerns about nitrogen loss reducing fertilizer efficiency.

“That’s the gamble,” he said. “Producers have to balance inputs like nitrogen based on yield potential and decide whether they can be more aggressive and take advantage of good conditions or to be more conservative in the event conditions become unfavorable.”

As always, weather through the rest of the season will determine producers’ outcomes despite the good start, Schnell said. Too much water can be as bad or worse than too dry for corn production.

“Central Texas is pretty wet after the recent line of storms,” he said. “We’re hoping the next round of storms does not produce flooding or saturation for an extended time because those conditions can cause problems.”
Future Soil Scientists?

Congratulations to the Brazos County 4-H soil judging teams for an outstanding performance at the Southeast District 9 Soil Judging Contest!

The teams earned high point team and/or individual honors in each age bracket.

Heather Watson, Former Student from the Department of Soil and Crop Sciences, and Cristine Morgan, former Soil and Crop Sciences faculty, coached the three teams. Gaylon Morgan, Soil and Crop Sciences Professor and AgriLife Extension State Cotton Specialist, helped coach the Juniors.

In the Junior division, Micah Gentry, son of Soil and Crop Sciences Professor Terry Gentry, was the 1st place individual with William Morgan, son of Gaylon and Cristine, the 2nd place individual.

The Intermediate team brought home the high point team trophy and swept the high point individual awards. Claire Morgan, daughter of Gaylon and Cristine, was the high point individual, followed by Summer Halbert in second and Mia Gentry, daughter of Terry Gentry, in third.

Baily Halbert claimed high point individual honors in the Senior division.

Dr. Jake Mower, Assistant Professor and Extension Specialist in the Department of Soil and Crop Sciences, and Cristine Morgan conducted the event.

Farewell and good luck!

The Department of Soil and Crop Sciences said farewell to three longtime members of the faculty and staff in April.

Drs. Gaylon and Cristine Morgan, Professor and State Cotton Specialist and Professor of Soil Science, respectively, and Linda Francis, Senior Administrative Assistant for Extension, are leaving the department.

Cristine began working for the Soil Health Institute in February. She has worked out of College Station for the past few months, but will be relocating with the family this summer.

Gaylon has accepted a position with Cotton Incorporated. He will be leaving at the end of May and the family will be moving to North Carolina.

“Gaylon provided excellent leadership for the cotton industry, including growers, graduate students, colleagues and the industry across the cotton belt,” said Dr. Larry Redmon, Soil and Crop Sciences Associate Department Head - Extension.

“We wish them the best as they take on new leadership roles in their respective fields,” said Soil and Crop Sciences Department Head David Baltensperger. “We look forward to great interaction with them on new projects.”

Linda Francis retired after 18 years as an administrative assistant in the department. For the past 15 years she worked under Redmon.

“Linda provided excellent service and support to our Extension unit specialists and program specialists,” Redmon said. “She also helped many graduate students, undergraduates and our producer clientele, and took great care of me for the past 15 years.”

Linda plans to return in the fall to help Redmon with his Ranch Management University and the Bennett Trust Land Stewardship Conference in Fredericksburg.
May

**Small Grain Field Days - multiple dates - check http://varietytesting.tamu.edu for a location near you!**
10 - Graduation, 9:00 a.m. Reed Arena, College Station
13 - Water Well Screening - Victoria, TX contact: http://twon.tamu.edu/well-informed/
14 - Water Well Screening - Refugio, TX contact: http://twon.tamu.edu/well-informed/
14 - NAPB Webinar with Dr Amanda Hulse-Kemp (former student)  11:00 a.m. Register
15 - Midterm P&T Meeting
20 - Full P&T dossiers due to mentor committee
21 - Texas Wheathearts Wheat Field Day - Ochiltree County
21 - Texas Watershed Stewards - Jasper, TX contact: Michael Kuitu - mkuitu@tamu.edu
22 - Texas Watershed Stewards - Lufkin, TX contact: Michael Kuitu - mkuitu@tamu.edu
22 - Texas Panhandle Wheat Tour - Bushland
27 - Memorial Day Holiday

June

18 - Stiles Farm Field Day - Thrall, TX
20 - Healthy Lawns Healthy Waters workshop - Kyle, TX Contact: John Smith - johnwsmith@tamu.edu
25 - Healthy Lawns Healthy Waters workshop - Seguin, TX Contact: John Smith - johnwsmith@tamu.edu

July

4 - Independence Day holiday
10-11 - Sustainable Agronomy Conference - Omaha, NE
14-16 - Texas Turfgrass Association Summer Conference, College Station
23-24 - Cotton Breeders Tour
23-25 - Southern Region Water Conference

Save the Date

Aug. 19-20 - Soils Critique, Scotts Turfgrass Facility, College Station
August 28-29 - Small Grain Workers Meeting, College Station
Oct. 9 - TAMU Turfgrass Field Day, College Station