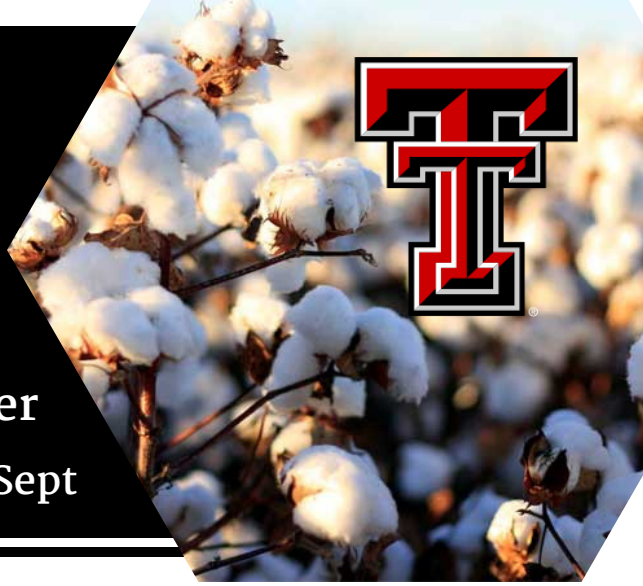
DEPARTMENT OF PLANT AND SOIL SCIENCE

[This issue]



Newsletter

July | Aug | Sept

NEW FACULTY HIRE: LUIS RAFAEL HERRERA-ESTRELLA

With its world-class facilities, knowledgeable faculty and collaborations with industry leaders, Texas Tech University has already earned a reputation as one of the world's leading research institutions when it comes to the genetics, production and processing of cotton.

That reputation was critical as Texas Tech has received a major grant from the State of Texas' Governor's University Research Initiative (GURI) that has allowed the university to bring in one of today's top cotton genomics researchers.

Luis Rafael Herrera-Estrella, who was elected as a Foreign Associate Member of the National Academy of Sciences (NAS) in 2003, will join the Texas Tech's Department of Plant and Soil Science becoming the university's first NAS faculty member.

Herrera-Estrella joins Texas Tech thanks to a $5 million grant from GURI, which the university matched, in order to target one of the top plant molecular biologists in the world. Herrera-Estrella will build a team of scientists and develop an institute that examines how plants adapt to thrive in the presence of environmental stresses such as extreme heat and cold, drought and in the presence of brackish water sources.

"Agriculture represented a core area in the educational and research missions of Texas Tech when it was founded, and today our contributions in this area continue to gain national and international recognition," said Lawrence Schovanec, Texas Tech president. "Dr. Herrera's research in cotton genomics will further the profile of the university as a leader in cotton and agriculture research, while also contributing to the economic development of West Texas and the state."

Eric Hequet, the chairman of the Department of Plant and Soil Science who helped identify Herrera-Estrella as a prime candidate for this grant, said the institute will be composed of an initial cluster of five tenure-track faculty positions spanning the sub-disciplines of plant cell biology, developmental genetics, stress physiology and biochemistry, plant pathology and bioinformatics. It will form a research synergy on functional and comparative genomics of semi-arid crops and be supported by studies on genetic models.

"In addition to this new cluster of expertise, the Department of Plant and Soil Science has a well-established proficiency in various aspects of integrative plant stress biology, including plant epigenetics and epigenomics, cell wall biology, molecular plant breeding, quantitative genetics and phenomics," Hequet said. "This additional expertise reflects already established research programs at Texas Tech that are recognized nationally and internationally in their own rights. These existing programs will collaborate with the new institute to create a truly integrative and interdisciplinary research and graduate training platform in systems biology in the Department of Plant and Soil Science and across the Texas Tech campus."

Herrera-Estrella is known and respected worldwide for his work in cotton genomics, having earned the distinction in 2015 as one of the 100 most influential people in biotechnology by Scientific American. He previously served as the director and full professor of the National Laboratory of Genomics for Biodiversity (LANGEBIO) in Guanajuato, Mexico, where he will retain his position as a professor emeritus.

Herrera-Estrella's research focuses on the molecular mechanisms that allow plants to cope with a continuously changing environment. In particular, he has studied the two fundamental processes of molecular responses to light as a source of energy and a developmental signal, and nutrient availability. He was able to eventually identify DNA regulatory elements that allow plants to activate genes in response to light stimuli and the protein sequence present in many corresponding gene products that ultimately allow participation in the photosynthesis process.

Herrera-Estrella earned his doctoral and postdoctoral degrees in genetics from the State University of Ghent, Belgium. He received his master's degree in genetics and molecular biology from the Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional, and his bachelor's degree from Escuela Nacional de Ciencias Biológicas Instituto Politécnico Nacional.

narrative written by George Watson from the office of Communications and Marketing

[FACULTY NEWS]

Dr. Peter Dotray "happily joined the ranks of past presidents" of the American Peanut Research and Education Society (APRES). Dotray presided over the 50th annual meeting of APRES as his final duties as president, and passed the torch to Rick Brandenburg of N.C. State University, to replace him as president of the society.

The American Institute of Floral Designers (AIFD) has recognized **Russell Plowman** as a recipient of its distinguished Certified Floral Design (CFD) designation. Plowman received this designation after being successful in completing the Professional Floral Design Evaluation (PFDE). Along with receiving the coveted CFD designation, Plowman's designs were considered to be so artistic that he was invited to become an accredited member of AIFD. Upon acceptance of said invitation, he will be inducted at the AIFD 2019 National Symposium in Las Vegas, NV, July of next year.

Dr. David Weindorf spent the entire month of July conducting research in Alaska and leading the Arctic Soil Field Tour through the University of Alaska Fairbanks. Weindorf, along with Karen Vaugn from the University of Wyoming, and Sasha Kholodov from the University of Alaska Fairbanks, led the class, comprised of 15 students from a number of universities all over the United States. The students spent ten days digging field pits, camping out, studying permafrost, carbon dynamics, and land use management, among other such activities.

Texas Alliance for Water Conservation (TAWC) held its 13th annual field day on September 6th in Muncy, TX. **Dr. Glen Ritchie** presented a talk entitled, "Irrigation Timing Effects on Cotton Yield and Quality". **Dr. Chuck West** is the administrative director of TAWC, whose mission is to demonstrate and transfer technology of efficient crop irrigation.

Kirk Williams, Senior Teacher-Viticulture and Enology Certificate Program, received the T.V. Munson award from the Texas Wine & Grape Growers Association in February of 2018. This award recognizes exemplary contributions to Texas grape growing.

The Viticulture and Winemaking Certificate programs held a graduation ceremony on July 29th at the Hill Country University Center in Fredericksburg. The Viticulture Certificate had 22 graduates from the 2016 cohort and the Winemaking Certificate had 18 graduates for 2018.

It is with a heavy heart that we share of the passing of **Dr. George Tereshkovich**, or "Dr. T", as he was affectionately known to faculty and students alike.
Dr. T retired from the Plant and Soil Science department as a full professor in 1995, after 27 years of teaching in the department. In his retirement, he traveled extensively, cruising to many places around the world.
Contributions may be made in memory of Dr. Tereshkovich to The George and June Tereshkovich, Horticultural Scholarship, Department of Plant and Soil Science, Texas Tech University, Lubbock, Texas 79409-2122, or to your favorite charitable organization.
Dr. T will be greatly missed by all!

[PUBLICATIONS]

- Li, B., B.D. Marx, S. Chakraborty, and D.C. Weindorf. 2018. Multivariate calibration with robust signal regression. Statistical Modelling: An International Journal. doi.org/10.1177/1471082X18782813
- Sun, Y., W. Guo, D. Weindorf, F. Sun, S. Deb, Z. Lin, J. Neupane, A. Raihan, and C.P. West. 2018. Within field spatial variability of soil elements analyzed using PXRF. International Aridlands Conference. Lubbock, TX. 13-14 August, 2018
- Lima, T.M., B.T. Ribeiro, D.C. Weindorf, R.M.Q. Lana, N. Curi, and L.R.G. Guilherme. 2018. Estimation of clay content in Brazilian agricultural soils based on portable X-ray fluorescence data. 21st World Congress of Soil Science. Rio de Janeiro, Brazil. 12-17 August, 2018
- Paulette, L., D.C. Weindorf, S. Chakraborty, and B.M. Duda. 2018. Eastern Europoean pollution assessment via portable X-ray fluorescence spectrometry: Soils and vegetation. 21st World Congress of Soil Science. Rio de Janeiro, Brazil. 12-17 August, 2018
- Chakraborty, S., B. Li, D.C. Weindorf, and C.L.S. Morgan. 2019. External parameter orthogonalisation of Eastern European VisNIR-DRS soil spectra. Geoderma 337:65-75
- Pelegrino, M.H.P., D.C. Weindorf, S.H.G. Silva, M.D. de Menezes, G.C. Poggere, L.R.G. Guilherme, and N. Curi. 2018. Synthesis of proximal sensing, terrain analysis, and parent material information for available micronutrient prediction in tropical soils. Precision Agriculture doi: https://doi.org/10.1007/s11119-018-9608-z
- West, C.P. 2018. Water footprint of stocker beef production. Annual meeting of the American Society of Animal Science. July 11, Vancouver, BC
- Bhandari, K.B., C.P. West, V. Acosta-Martinez, J. Cotton, and A. Cano. 2018. Soil health indicators as affected by diverse forage species and mixtures in semi-arid pastures. Appl. Soil Ecol. 133. doi:10.1016/j.apsoil.2018.09.002
- Bhandari, K.B., C.P. West, S.D. Longing, C.P. Brown, P.E. Green, and E. Barkowsky. 2018. Pollinator abundance in semiarid pastures as affected by forage species. Crop Sci. 58 (6). doi:10.2135/cropsci2018.06.0393
- Bhandari, K.B., C.P. West, and S.D. Longing. 2018. Communities of canopy-dwelling arthropods in response to diverse forages. Agric. Environ. Lett. 3:180037. doi:10.2134/ael2018.07.0037

[STUDENT HIGHLIGHT-JESSICA DOTRAY]

Born and raised right here in the Hub City, Jessica Dotray naturally transitioned to Texas Tech University. Dotray began her studies in the Animal & Food Science department but quickly found her passion for plant science while working at the on-campus greenhouse complex. During that time she "realized [she] would rather work with plants than animals", Dotray explained.

Dotray eventually "found [her] passion for vegetable and small fruit production" during an internship on an agro-tourist vegetable farm, in Harbor Springs, Michigan. "We grew over 20 different crops, where we would sell the produce at local farmer's markets and use them at the on-site cafe", she explained. She continues that passion in her current position at the Texas A&M AgriLife Research and Extension Center, working under the vegetable specialist, Dr. Russ Wallace. Alongside Dr. Wallace, Dotray is "learning to grow crops in high tunnels" and participates in a number of research trails on various crops.

Dotray has kept busy during her time at Texas Tech University. Along with specializing in Horticulture and Turfgrass Science, she is minoring in Chemistry and has steadily maintained her position as a member of the Honors College. She is also an Agri-Techsan within the College of Agricultural Sciences and Nautral Resources.

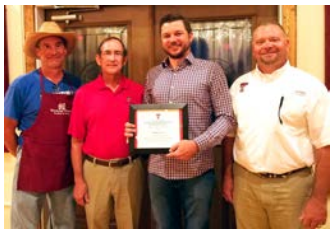
Upon completion of her Bachelor's degree this December, Dotray hopes to continue her education and pursue a Master's in Horticulture.

[STUDENT NEWS]

The Wild Rabbit farms, managed by Plant and Soil Science alumnus, Josh Molligan, made their first appearance at the Lubbock Downtown Farmers Market this August. All proceeds from the event went to benefit the Burkhart Center for Austism Education and Research. For more information on the Wild Rabit Farm and its affiliates, follow the link to an article in Texas Tech Today. http://today.ttu.edu/posts/2018/08/burkhart-center-wild-rabbit-farms

Brad Dixon, Junior in the Viticulture and Enology Program and employee of Spicewood Vineyards in Fredericksburg, received the first Melanie Holloway Viticulture and Enology Scholarship

Photo Courtesy of Ed Hellman



Callista Tovar and Nelson Avila (holding frames) were presented with $1000 scholarships from The Texas Center for Wine and Culinary Arts (TCWCA).

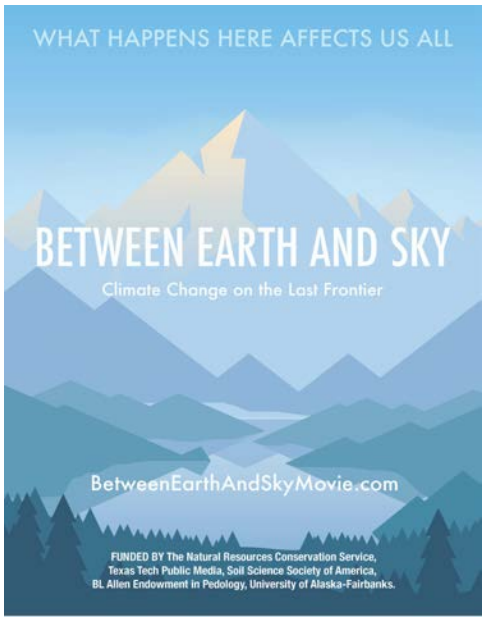
Tovar and Avila will be starting the new Plant & Soil Science specialization in Local Food and Wine Production Systems in Fredericksburg.

McKenna Keele, Senior studying Viticulture and Enology, received the $2,000 High Plains Wine and Food Foundation Scholarship.

Come stop by the Plant and Soil Science booth at the Majors and Minors fair in the Student Union Building Ballroom on October the 18th from 10am-1pm

[PSS NEWS]

On November 29th the Plant & Soil Science Department Seminar Series will host internationally renowned researcher Dr. Gurdev Khush. Dr. Khush is an elected fellow of the Indian National Science Academy, the US National Academy of Sciences, and the Royal Society of London. He has also been awarded the world's top prizes in agriculture including the World Food Prize (1996) and the Wolf Prize (2000). His arrival was facilitated by the newly formed Graduate Student Seminar Committee composed of PSS graduate students with the objective of enhancing our regular departmental seminars with highly impactful lecturers hand selected by the students themselves. Dr. Khush's seminar will be preceeded by a social event at 3:15pm in the ballroom of the International Cultural Center at Texas Tech with the seminar held at 3:45 in the adjacent lecture hall. Anyone interested is welcome to attend this exciting event. For more information contact Jake Sanchez (e-mail: Jacobo.Sanchez@ttu.edu, phone # (806) 252-3001).



Between Earth and Sky – Climate Change on the Last Frontier has officially been nominated for an Emmy Award. The awards show will be November 10th in Houston, Texas. The film, produced by Texas Tech Public Media (Paul Allen Hunton, Director), explores the impact of global climate change on arctic soils and ecosystems of Alaska. A selection of more than 7 film festivals across the USA, the film showed on PBS in 15 states to include major markets such as New York City, San Francisco, Portland, and was viewed by thousands through special select theater screenings. Internationally, it has been shown in Austria, UK, Brazil, and Italy. It is now available for streaming on iTunes, Google Play, and Amazon. Sponsors of the film include: Texas Tech University, University of Alaska Fairbanks, USDA Natural Resources Conservation Service, Soil Science Society of America, and the BL Allen Endowment for Pedology (Texas Tech). Plant and Soil Science's, **Dr. David Weindorf**, is the Executive Director of this film.

The Plant and Soil Science Graduate Student Council is a newly reformed club that is off to a great start this semester! The purpose of the Graduate Student Council is to serve as a direct line of communication between the graduate student body and faculty and/or administration regarding departmental courses and policies, stimulate graduate student interest between disciplines within PSS, provide opportunities for a wider acquaintance with professionals in such disciplines, foster a spirit of cooperation and mutual helpfulness among students, and provide leadership opportunities for members. The club has held three meetings so far this semester and elected officers. Current officers are: President- Jacob James, Vice President- Grace Ogden, Secretary- Joao Paulo Morais, and Treasurer- Shan Wong.

The Grad Council is now taking pre-orders for mini cotton bales for $10 each. Each bale is approximately the amount of cotton that goes into one t-shirt. To place an order, please contact shan.wong@ttu.edu with the amount of bales you would like to purchase. Deadline for orders is November 1st, 2018. Grad Council only accepts cash or check at this time.