

Contact

Plant and Soil Science
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Faculty Meetings

Jan. 11: PSS Faculty Meeting, PS 115 at noon
Feb. 11: PSS Faculty Meeting, PS 115 at 3:00
Mar. 11: PSS Faculty Meeting, PS 115 at noon
April 15: PSS Faculty Meeting, PS 115 at 3:00
May 20: PSS Faculty Meeting, PS 115 at noon

Important Dates

December
8: Last Day of Class
10-15: Final Exams
17-18: Commencement
24-2: Christmas Holiday
January
12: First Day of Class
17: MLK, Jr. Day—University Holiday
February
1: Scholarship Application Deadline
March
12-20: Spring Break

Staff/Student News

Luis Cabrales was accepted as Level 1 member of the National System of Researchers (SNI) of the National Council of Science and Technology of Mexico (CONACYT) from January 2011 to January 2013.



Kevin Meeks, Kimberly Vining, Oscar Cordoba, and Zach Hinds all presented posters at the Association for the Advancement of Industrial Crops in Fort Collins, CO this past September. Kimberly was selected for a \$1,000 scholarship to defer travel expenses to the meeting.

Steve Oswalt and Jacob Rieff traveled to Saskatoon Canada to attend the 10th Annual Biotechnology International Conference where they presented posters. By unanimous acclaim, "Great Western Pilsner" was selected as the best beer sampled in their Canadian expedition.

Representatives from the Belsterling Foundation of the Dallas Women's Garden Club visited the campus Nov. 3. The foundation supports graduate student scholarships for students studying in the area of ornamental horticulture. The representatives toured the campus, gardens and greenhouses and were treated to a luncheon at the new Texas Tech Club. During the luncheon, scholarship recipients **Amber Bates** and **Kaylee Decker** presented a summary of their research. This was followed by a presentation of Wine Grape Production in the High Plains by **Dr. Ed Hellman**.

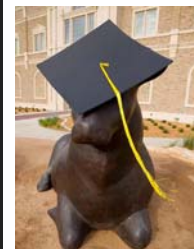


Mr. Carlos Villarreal defended his MS thesis in Soil Science entitled "Spatial distribution and morphology of sediments in the Texas Southern High Plains, USA playa wetlands." Carlos was a graduate student of Dr. Zartman. He works for NRCS and will officially graduate in December.



Dr. Eric Hequet was selected as a recipient of the **2010 Chancellor's Council Distinguished Research Award**. The Chancellor's Council has recognized top teaching and research faculty at both the University and the Health Sciences Center for ten years. Congratulations to Dr. Hequet! He has made an impressive impact on the Texas Tech community, the department, and our students.

Graduating Students



Ph. D. in Agronomy

Nicolas Denwar

Ph.D. in Plant and Soil Science

Yue, Li

Elizabeth M. Hamill

M.S. in Crop Science

Jamie Ayers

M.S. in Soil Science

Carlos Villarreal

B.S. in Agronomy

Caleb Albers

Justin Cave

Shay Morris

B.S. in Horticulture

Joyce Fethke-Block

Rebecca Grubbs

Jennifer Harlien

Leslie Horne

William Currie Jones

Erick Leslie

Garrison Stinnett

Adam C. Thompson

Holly Williams

B.S. in Plant Biotechnology

Kimberly C. Nelson



Caleb Albers, Justin Cave, Rebecca Grubbs, and **Shay Morris** have been accepted into our PSS Graduate program; and **Kimberly C. Nelson** has been accepted into the TTU Medical School program.



The 5th Annual PSS Christmas Chili Lunch was held at the Quaker Avenue farm on Friday, December 10th. It was an opportunity for faculty staff, and students to gather and celebrate the upcoming holiday. The lunch was a great success. **Thank you to Steve Oswalt and all of the guys at the farm for all of their help.**



The Department of Plant and Soil Science wishes you and your loved ones a happy and healthy holiday season and a wonderful new year!



October, November,
& December
2010

Plant and Soil Science
NEWSLETTER

this issue

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PSS Distinguished Lecture Series

The **Department of Plant and Soil Science** kicked off it's **Distinguished Lecture Series** on September 27th at the Escondido Theater in Tech's Student Union Building.

The first speaker in the series was **Dr. Stan Cox** from the Land Institute in Salina Kansas. Dr. Cox is a nationally recognized plant breeder who is studying the breeding of perennial grain crops with a goal of increasing food and ecosystem security. Dr. Cox received his bachelor's degree in agronomy from the University of Georgia and his master's and doctorate in plant breeding from Iowa State University.

The second speaker in the series was **Dr. Roy Cantrell** from Monsanto. He presented his lecture on November 8th. Dr. Cantrell has been working on the challenge of adding drought tolerance, improved fiber quality, and may other traits to cotton. Dr. Cantrell received his bachelor's degree from Texas Tech and his master's and doctorate from the University of Minnesota. He worked for Cotton Incorporated before taking a position with Monsanto in 2007.

The next speaker in the series will be **Dr. Gebisa Ejeta** from Purdue University. His lecture is scheduled to be presented on January 31st. Dr. Ejeta is a plant breeder and geneticist who won the 2009 World Food Prize.



Chat with the Chair



Among the many exciting recent developments in PSS is the rapid (60% in 3 years!) growth in graduate student enrollment. This has happened because our faculty continues to be highly competitive in garnering external grant funds, and significant increases in numbers of students enrolled in our MS in Horticulture (at a distance). Just as exciting to me is the growing commitment in our department to offer truly great graduate programs. This is not something we can achieve overnight, but instead will take years of dedicated effort. But, the payoff will be worth the price.

our graduate students. Another exciting development is the new "Dr. George Tereshkovich Outstanding Dissertation Award", funded by a generous PSS alumnus. Beginning in 2011, the faculty will award a \$5,000 prize annually for the best dissertation by a PSS student. Finally, our faculty recently decided to consolidate to two M.S. degrees ("Plant and Soil Science", and "Horticulture") to reflect current departmental strengths and improve our assessment of student learning outcomes, with the goal of continuous program improvement. The leadership of Eric Hequet as Graduate Program Leader deserves special mention—he has helped to create an atmosphere of high expectations within our graduate programs, by ensuring that faculty and students clearly understand university and departmental standards.

The growing commitment to excellence in PSS graduate programs is consistent with TTU's determination to become a national research university and increase graduate student enrollment. Within PSS, this commitment can be seen in a number of ways. Our new "Distinguished Lecture Series", sponsored by the endowed chairs in PSS, will bring outstanding scientists to our campus. Our department will host two World Food Prize laureates as distinguished lecturers in 2011. The re-energized Graduate Student Council in PSS has been instrumental in bringing some of these speakers to campus—and this is evidence of the quality of

Developing outstanding graduate programs demands a commitment by our faculty to rigorous admission standards, and high expectations for faculty mentoring and student scholarship in our graduate programs. If we remain committed to excellence in our graduate programs, I am convinced that PSS can become one of the 'go-to' programs in the plant and soil sciences in the nation.

For Your Consideration

"It's what you learn after you know it all that counts."

-Attributed to Harry S. Truman

Faculty Corner



Gerald Henry's Research Spotlight

(Evaluation of Cool-Season and Warm-Season Grasses for Seed Production in West Texas)

The 2008 Farm Bill approved cuts to the Conservation Reserve Program (CRP) that removed approximately 7 million acres of land from the program nationwide starting October 1, 2009. More than 750,000 acres expired in Texas, most of which are on the High Plains. This has left landowners desperate for options to pay for property they can no longer afford. Many agronomists fear farmers will be forced to return these lands to agricultural production, leading history (the Dust Bowl of the 1930s) to repeat itself. **Dr. Gerald Henry**, Assistant Professor of Turfgrass Science, and **Dr. Dick Auld**, Rockwell Endowed Chair in Plant and Soil Science, are directing a study in West TX beginning the spring of 2011. The study, funded by a grant from the Texas Department of Agriculture in 2010, will investigate the seed production of cool-season and warm-season grass species in West TX. Graduate students **Leslie Beck** (Ph.D. candidate) and **Tyler Cooper** (M.S. candidate) will be participating in the establishment, maintenance, and harvest of the aforementioned research at the Quaker Research Farm in Lubbock, TX and the AgriLife Research and Extension Center in Pecos, TX.

Grass seed production may be a viable and more environmentally friendly alternative to the production of traditional agricultural crops. In 2003, it was estimated that grass seed production in Oregon was valued at over \$275 million. The production of perennial grass seed crops is not only lucrative, but it may help reduce soil erosion, chemical/fertilizer inputs, and yearly planting costs. Dry summers and cool, wetter winters are perfect conditions for grass seed production. Production in West TX could bolster and help diversify an already strong agronomic market. The enhancement to the seed production industry would also increase employment opportunities throughout TX. The state of Oregon constructed over 370 seed conditioning facilities in order to process its annual seed crop. These facilities help to employ thousands of people. Overall, the production of a perennial grass seed crop would be good for the economy, community, and environment of West TX.



Awards, Grants, and Other News

The American Peanut Research and Education Society recognized **Dr. Dotray** with the Dow AgroSciences Award for Excellence in Research for outstanding research contributions to agriculture, science, and the peanut industry. The award was presented July 15, 2010 at Clearwater Beach, Florida

Dr. Moore-Kucera was awarded a travel grant sponsored by NSF to attend and participate in the 2nd Annual Argonne Soils Workshop. "The primary aim for the workshop was to discuss the next generation of ecologically meaningful soil metagenomics research." Dr. Moore-Kucera presented the poster, "Pyrosequencing-based assessment of bacterial diversity in soil aggregates under irrigated crop and livestock systems." Co-

authors were: **Marko Davinic**, **Lisa Fultz**, Veronica Acosta-Martinez, Scot E. Doud, Stephen Cox, and **Vivien Allen**. Funding for this work is provided via a USDA-SSARE grant (Project Number LS10-29).

Dr. Abidi has been selected to serve as a Secretary of the Cellulose and Renewable Materials Division/American Chemical Society.

Wenwei Xu, Thomas Marek, and Steve Amosson received a grant to study drought- and heat-tolerant short-season hybrids for corn production in the Texas High Plains. USDA Ogallala Aquifer Program. \$90,500. September 2010 - August 2012.

Recent Publications

Bechere, E., **D.L. Auld**, **P. Dotray**, and H. Kebede. 2010. Registration of four upland cotton (*Gossypium hirsutum* L.) genetic stock mutants with tolerance to imazamox. *Journal of Plant Registrations*. 4:155-158.

Grichar, W.J. and **P.A. Dotray**. 2010. Response of Texas peanut to chlorimuron alone and in various combinations. *Peanut Science*. 37:26-31.

Dotray, P.A., T.A. Baughman, and W.J. Grichar. 2010. Peanut response to carfentrazone-ethyl and pyraflufen-ethyl applied postemergence-topical. *Peanut Science*. 37:52-57.

Grichar, W.J., **P.A. Dotray**, and T.A. Baughman. 2010. Peanut variety response to applications of carfentrazone-ethyl and pyraflufen-ethyl. *Crop Protection*. 29:1034-1038.

Batla, M.A., J.W. Keeling, and **P.A. Dotray**. 2010. Palmer amaranth (*Amaranthus palmeri*) management in second-generation glyphosate-resistant cotton. *Texas Journal of Agriculture and Natural Resources*. 23:64-70.

Grichar, W.J., **P.A. Dotray**, and T.A. Baughman. 2010. Postemergence weed control in

peanut using reduced rate or combinations of imazapic and imazethapyr. Online. *Crop Management*. doi:10.1094/CM-2010-1110-01-RS.

Luis Cabrales, **Noureddine Abidi**. On the thermal degradation of cellulose in cotton fibers. *J. Thermal Analysis and Calorimetry*, 102: 485-491 (2010).

Rajan, N., **S.J. Maas**, and J.C. Kathilankal. 2010. Estimating crop water use of cotton in the Texas High Plains. *Agronomy Journal* 102:1641-1651.

Junping Chen, **Wenwei Xu**, John Burke, and Zhanguo Xin. 2010. Effect of High Temperature on Membrane Thermostability: Role of membrane lipids in high temperature tolerance in maize. *Crop Science* 50:2506-2515.

Seyed Ali Hashemi, Mojgan Zandi, **Payam Aminayi**, **Farzad Hosseinali**. Preparation of novel stimuli responsive microcapsules containing disperse dye through layer by layer assembly technique. *Journal of Applied Polymer Science*, Volume 119, Issue 1, pages 586-594, (DOI: 10.1002/app.32674)

Talks and Presentations

Dr. Peter Dotray gave several presentations in July at the American Peanut Research and Education Society meeting in Clearwater, FL and at the Gaines County Peanut Tour in Seminole, TX. Topics were as follows:

1. Peanut tolerance and weed control following fomesafen applied at different rates and timings in Texas; 2. Utility of flumioxazin in Texas Peanut; and 3. Weed control update in peanut.

Dr. Wenwei Xu was an invited speaker at the 'Plant meeting future challenges—food and energy for the society in a changing environment' symposium held at the University of Zurich, Switzerland, on Sept. 10. He was also invited to visit the Maize Research Institute, Agricultural Academy of Jilin Province in China to give a seminar on breeding drought tolerant corn, on Nov. 8-12.

PSS had a lot of representation at the ASA/CSSA/SSSA Annual Meeting in Long Beach, CA Oct. 31—Nov. 4. The following people gave presentations or presented papers:

1. **Ying Hu**, **Wenwei Xu**, and Junping Chen. A self-referencing method for selecting heat-tolerant corn. 2. **Wenwei Xu**, Junping Chen, and Zhanguo Xin. Exploring native genetic variation for improving drought tolerance and water use efficiency in corn. 3. **Jennifer Moore-Kucera**, Veronica Acosta-Martinez, Anita Azarenko, David Myrold, David Wester. 2010. Soil Chemical and Biochemical Surveys of Sweet Cherry Agroecosystems in the Pacific Northwest. 4. **Lisa Fultz**, Grant Sorensen, Franchely Cornejo, **Jennifer Moore-Kucera**, Sandra Rideout-Hanzak and David Wester. 2010. Short-term Effects of Prescribed Burn Frequency on Rangeland Soils. 5. **W. F. Jaynes** and **R. E Zartman** Effects of Water-Soluble Feed Components, Such as Proteins, on Aflatoxin Binding to Clays.

Also, **R. E Zartman** and **W. F. Jaynes** presented a paper at the 2010 Chemical and Biological Defense Science and Technology Conference in Orlando, FL entitled "Soil sealing amendments to mitigate ricin redistribution with dust."