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Plant and Soil Science

NEWSLETTER



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PSS
Distinguished
Lecture Series

A Distinguished Lecture from World Food Prize Laureate

The third speaker in the **Department of Plant and Soil Science's Distinguished Lecture Series** was **Dr. Gebisa Ejeta** from Purdue University. He presented his lecture, titled "Feeding More with Less: Humanity's Grand Challenge of the 21st Century," on January 31, 2011.

Dr. Ejeta is an internationally recognized plant breeder who is studying grain sorghum with a goal of developing sorghum varieties that are tolerant to drought and cold, and resistant to pests, disease, and

parasitic weeds. In 2009, he received the World Food Prize for his research, which led to increased availability of sorghum in Africa.

Previous speakers in the series were **Dr. Stan Cox** from the Land Institute in Salina, Kansas and **Dr. Roy Cantrell** from Monsanto.

Funding for the Distinguished Lecture Series is jointly provided by faculty holding endowed chairs and the department.



Chat with the Chair

Most of you know by now that I will resign from TTU effective May 31, and will be leaving Lubbock. It has been a distinct honor to serve in this role, and I'm very grateful for the opportunity.

The dedication of our excellent faculty and staff and, most importantly, commitment to teamwork have allowed us to accomplish a lot in recent years. Since 2006, we have thoroughly revised our degree programs to streamline and bring them up-to-date. We have created a new option in Viticulture and Enology and re-energized the turfgrass science program. We have brought several distinguished speakers to campus and created a \$5,000 per year 'Outstanding Dissertation Award'. We have emphasized student recruiting and retention—with a resulting 60% increase in graduate and undergraduate student numbers since 2007. We continue to grow our distance education programs, despite very limited resources. By this time next year, 75% of PSS faculty will be directly involved in teaching and advising students at a distance. For most, this represents an increased workload—but PSS faculty have 'gone the extra mile' for the good of the department. Even though the prospect of a new or renovated building for PSS is uncertain, we have improved our facilities. At our Quaker

Avenue and New Deal research farms we have installed 68 acres of new state-of-the-art subsurface drip irrigation, and acquired turf maintenance equipment and two new GPS-guided tractors since 2007. Our research and teaching greenhouses have also seen many improvements, including new concrete floors, climate control, irrigation, and lights in many greenhouses. We have acquired some excellent new research instruments—a GC-MS, CN analyzer, X-ray diffractometer, several chromatographs, and much more. The International Textile Center was merged with PSS in 2008, and the name was changed to the Fiber and Biopolymer Research Institute. What hasn't changed is the reputation of the institute as a global leader in cotton fiber quality. Our department continues to be a leader in research at TTU, and competitive grantmanship by PSS faculty has increased by 50% since 2007.

Thank you for the opportunity to work with you during the past five years. I have been privileged to work with you and I look forward to a bright future for Plant and Soil Science.

Tom

For Your
Consideration

*Life is a series
of hellos and
goodbyes...*

- Billy Joel

Faculty Corner

Jennifer Moore-Kucera



I'm a wife, a mom, a scientist/ teacher and in the words of Todd Anderson, "in that order." My family and I have been in Lubbock for 2.5 years. Here is a brief history of how we 'arrived' here:

- 1994 graduated from Binghamton University (NY) with a double (almost triple with German) major in Biology and Environmental Studies. I took the one (and only) soil science course and loved it. Deciding to major in biology came after starting pre-med, a semester abroad in Austria, and an internship as a soil conservationist at Camp Pendleton Marine Corps Base in Southern California.
- It took me a year before committing to a graduate program. Fortunately, my geology professor at Binghamton (we still keep in touch), helped me find a good 'soils school'. I was offered a position with Dr. Tabatabai at Iowa State University in soil biochemistry and microbiology.
- Graduated from ISU in 1998 (MS in soil science). I moved to Washington State and worked as a research technologist in tree fruit nutrition for about 4 years.
- Returned to grad school for my PhD at Oregon State University (soil biochemistry and microbiology). I moved my research focus to 'bigger' trees and tracked how C moved through soil microorganisms under old-growth (500+ yrs) and clear-cut Douglas-fir forests. During my PhD I met my husband Jeff, we were married in 2004 and at 4 months pregnant, I defended my dissertation (2005).
- Moved a few weeks later to Tucson, AZ to serve as a USDA post-doc. I began studying trace gas fluxes in semi-arid grasslands. Our experience in Tucson was both wonderful, with the birth of our daughter, Kalina, as well as tragic, with the unfortunate and untimely death of my mentor, Dean Martens, just a few days following her birth. With Dean's passing, we relocated (they did not refill his position) back to OSU where I was a post-doc in horticulture (studied orchard floor management and soil impacts) (2006-2008).
- Jeff begins his new career as "stay-at-home dad" and makes it possible for me to continue my career!
- In 2008, with the suggestion of my good friend and colleague, Veronica Acosta-Martinez (soil scientist, USDA, Lubbock), I applied at TTU for the assistant professor in soil and environmental microbiology position. At 6 months pregnant, I interviewed, and 5 weeks following the birth of our second daughter, Cecelia, we moved to Lubbock.
- At TTU, I continue to conduct soil biochemical and microbial research. Specifically I investigate how microbial communities and their functionality (primarily C and N cycling) are altered by management. I teach Principles and Practices of Soils, Soil Microbial Ecology, and Environmental Soil Science. Additionally, I have taught IS 1100 (University-wide freshmen orientation) and PSS 1100 (Departmental freshmen and transfer orientation). I directly mentor one MS and two PhD students. Projects include: **Sustainable Sorghum Cropping Systems for Flexible Forage/Bio-energy Use under Limited Irrigation** (Jon Cotton; MS candidate), C Sequestration Potential and CO₂ and N₂O Fluxes Under Integrated Crop and Livestock Systems (Lisa Fultz; PhD candidate), Pyrosequencing-Based Assessment Of Soil Bacterial Communities Within Soil Aggregates: Linking Structure To C Storage (Marko Davinic; PhD candidate), and Degradability and Impacts on Soil Health of Biodegradable Mulches Under High Tunnels and Open Field Plots in Three Distinct Eco-regions (student pending).
- My current main hobby is simply playing with my family. Additionally, I love to ski, rock climb, bike, camp, and hike.



Talks, Presentations, & Papers

Talks & Presentations:

Dr. Parajulee and his students attended the Entomological Society of America Member Symposium in San Diego, California in December (12th-16th), where they gave 12 talks and presentations (several of them were invited presentations). The presentations are as follows:

1.) Use of AFLP markers in understanding host associated difference in cotton fleahoppers in Texas. 2.) Influence of proximity and abundance of non-cotton hosts on *Lygus hesperus* in cotton. 3.) Entomophagy in the United States: History, current status, and future prospect. 4.) The influence of landscape on *Lygus* management: What can growers do about it? 5.) Nepal Overseas Entomologists: Current status and future course of the

network. 6.) Use of neem extract and microbial insecticides for sustainable management of cotton bollworm, *Helicoverpa armigera*. 7.) Use of botanicals for the sustainable management of dengue mosquito vector, *Aedes aegypti*. 8.) Effect of nitrogen application rate on cotton growth parameters and arthropod activity in Texas cotton. 9.) Entomological networking: Role of Nepal Overseas Entomologists in Entomological Society of America. 10.) Landscape impacts on *Lygus* management in West Texas. 11.) Evaluation of molecular markers for genetic diversity studies of western tarnished plant bug (*Lygus hesperus* Knight). 12.) Immunological assays in ecological studies: Movement behavior of *Lygus* bugs in cotton.

Published Papers:

Barman, A. K., **M. N. Parajulee**, and S. C. Carroll. 2010. Relative preference of *Lygus hesperus* (Hemiptera: Miridae) to selected host plants in the field. *Insect Science* 17: 542-548.

Shrestha, R. B., and **M. N. Parajulee**. 2010. Effect of tillage and planting date on seasonal abundance and diversity of predacious ground beetles in cotton. *Journal of Insect Science* 10 (174): 1-17.

Allen, V.G., Batello, C., Berretta, E.J., Hodgson, J., Kothmann, M., Li, X., Mclvor, J., Milne, J., Morris, C., Peeters, A., and Sanderson, M. 2011. An International Terminology for Grazing Lands and Grazing Animals. *Grass and Forage Science* 66(1): 2-28.

See <http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2494.2010.00780.x/pdf>

Faculty News



Dr. Megha Parajulee served as the national Program Chair for Entomological Society of America's annual meeting in San Diego, December 12-16.

One of **Dr. Parajulee's** doctoral students from TAMU, Apurba Barman, received Gary Herzog Outstanding Oral Paper Presentation Award (second place) at Beltwide Cotton Conferences in Atlanta, Georgia, 4-7 January 2011. The title of the presentation was: A. K. Barman, **M. N. Parajulee**, C. G. Sansone, and R. F. Medina. 2011. Population level genetic variability of cotton fleahopper in the United States. Beltwide Cotton Conferences.

Bill Jaynes and **Richard Zartman** have a newly funded project: **Jaynes, W. F.** and **R. Zartman**. 2011. "Natural and synthetic binders to reduce fumonisin toxicity in corn" funded by Texas Corn Producers Board. \$15,000.



We are pleased to report that the Board of Regents approved **Dr. Eric Hequet's** promotion from Associate Professor to Professor. The promotion will be in effect September 1, 2011.

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Faculty Meetings

March 11
at 2:00 p.m. in PSS 115

April 15
at 2:00 p.m. in PSS 115

May 20
at 2:00 p.m. in PSS 115

Important Dates

March
12-20: Spring Break
13: Daylight Savings Time Begins

April
24: Easter Sunday
25: No Classes

May
3: Last Day of Class
5-10: Final Exams
13-14: Commencement

Student News

Jacob Reed and **Justin Cave** will both be recognized in the April issue of *CSA News*. **Jacob** has been selected for the **CSSA Gerald O. Mott Meritorious Graduate Student Award in Crop Science** and **Justin** has been selected for the **National Student Recognition Program** by the American Society of Agronomy.



Beltwide Cotton Conferences in Atlanta

January 4-7, 2011

Texas Tech and the Department of Plant and Soil Science were well represented at the Beltwide Cotton Conferences in Atlanta in January. Our department had several winners in the various competitions. Congratulations to everyone who participated.



Jacob Reed won first place in the Ph.D. section of the Weed Science student paper contest. His presentation, titled "Control of Palmer amaranth in GlyTol plus LibertyLink cotton," was authored by **Reed, Dotray,** and **Keeling**.

In the Beltwide Cotton Physiology Conference, two of our graduate students placed in the oral presentation competition.



Matthew Stroud won second place with his presentation titled "Evaluation of Water Use Efficiency, Yield Stability and Fiber Quality in Upland Cotton Cultivars,"

and **Natalia Castillo** won third place with her presentation titled "A Hydroponic Approach to Evaluate Responses to Salinity Stress in Cotton."



Hellos and Goodbyes

We are happy to announce that the department has hired **Dr. Glen Ritchie** to fill the Crop Physiology position vacated by Dr. Craig Bednarz last year. Dr. Ritchie has been hired as an assistant professor and arrived on April 1st. Dr. Ritchie received his Ph.D. from the University of Georgia in 2007. Afterwards, he stayed on with the University of Georgia as an assistant professor. Dr. Ritchie will be moving to Lubbock with his wife and six children.

take a position with Virginia Tech as the Head of their Department of Crop and Soil Environmental Sciences. We are sad to see him leave, but are very happy that he has this wonderful opportunity.

On a bitter-sweet note, our department chair, **Dr. Tom Thompson** will be leaving Texas Tech to

Also, **Dr. Vivien Allen** and **Dr. Harlan Thorvilson** have both announced that they will be retiring. Dr. Allen will retire at the end of the Spring 2011 semester (June 1st) and Dr. Thorvilson will retire at the end of the second summer semester (the end of August). Congratulations on your retirements!

S.A.L.E. Scholarship Fund

PSS in conjunction with the San Antonio Livestock Exposition, Inc. will begin a new scholarship fund starting the 2011-2012 academic year. The scholarship will provide funding for students who have chosen to receive a degree in viticulture. The scholarship will honor four graduate students and seven undergraduate students. More details will be announced as they become available.