Fall enrollment of undergraduate students in the Plant Sciences degree program totaled 125 students, the highest level seen in many years. I believe that we are seeing a response to active recruiting efforts, including the new video, as well as to the very strong job market for our graduates. Graduate enrollment is also higher, currently totaling 96 students.

As always, our Plant Sciences undergraduate and graduate students, faculty, and staff continue to receive significant honors and awards this summer (page 2). Our undergraduate students, for example, received several awards at the recent Students of Agronomy, Soils, and Environmental Sciences (SASES) meeting in Cincinnati. This group meets as part of the ASA, CSSA, and SSSA annual meetings. All five students who attended received awards, including two who were selected for the Golden Opportunity Scholars program, Heidi Davis and Dalton Ludwick. Of twenty scholars selected nationally this year, Mizzou was the only school with two. Other honors include Perry Gustafson, Adjunct Professor of Plant Sciences, who received the Outstanding Crop Scientist Award at the 6th International Crop Science Congress held recently in Brazil and Kim Martin, who was named Certified Floral Designer by the AIFD.

Kelly Nelson and the other folks at the Lee Greenley Jr. Memorial Research Center in Novelty, MO are highlighted in this issue of the Know Your Colleagues section (pages 5 & 6). Kelly is Associate Professor in Plant Sciences and leads agronomic research at the Center. Randall Smoot has provided strong leadership as Superintendent at the Center for 36 years. Greenly is a valuable resource because the 1,000 acre property represents the claypan soils of Missouri which are also found on millions of acres around the Midwest.

Congratulations to Reid Smeda, who was promoted to Professor this year. Reid provides leadership for our undergraduate program and conducts a research and teaching program in weed science (page 2). Chris Starbuck retired recently after more than 30 years of service (page 3). We are sorry to see Chris go, but I think we can still expect to see him around the campus with his camera.
Awards & Honors

Students win awards at SASES National Meeting

The MU Agronomy Club was well represented at the Students of Agronomy, Soils, and Environmental Sciences (SASES) National Meeting in Cincinnati, OH, held Oct. 19-24, 2012, where the Club placed 3rd out of 14 universities in the Club Poster Contest, presented by Matt Caldwell and Garth Duncan. Dalton Ludwick won 1st place with his team in the Quiz Bowl competition. Additionally, Heidi Davis and Dalton Ludwick were honored as Golden Opportunity Scholars (GOS) at the American Society of Agronomy, Crop Science Society of America, and the Soil Science Society of America International Annual Meeting. GOS is a prestigious program that selects scholars based on academic achievements and interests and matches undergraduate students with scientist-mentors. Of the 20 national Scholars, MU was the only school to have more than one this year.

Gustafson receives ‘Outstanding Crop Scientist Award’

Perry Gustafson, Adjunct Professor, received the Outstanding Crop Scientist Award at the 6th International Crop Science Congress-Bento Goncalves-RS-Brazil held August 6-10, 2012. The International Crop Science Society fosters communication among crop scientists. It nurtures the International Crop Science Congress held every four years. These Congresses stimulate thinking among scientists as to how advances in crop science, in all their aspects, can assist in meeting the critical diverse global challenges that lie ahead.

Tiger Garden’s Martin honored by International floral group

Kim Martin, Tiger Garden’s Supervisor and CAFNR Plant Sciences Design Instructor, was granted the designation of Certified Floral Designer by the American Institute of Floral Designers (AIFD) after successfully completing the Professional Floral Design Evaluation (PFDE) earlier this summer immediately prior to the Institute’s National Symposium in Miami. The symposium is the floral industry’s leading floral design education event, according to a news release from AIFD. AIFD is the floral industry’s leading non-profit organization dedicated to the advancement of the art of floral design through education. The full article can be found on CAFNR News.

Smeda promoted to Professor

Reid Smeda has been promoted to Professor starting September 1. Smeda is a weed physiologist and has a research/teaching appointment in weed science. His research focuses on: 1) development of alternative weed management systems for corn, soybean and vegetables. 2) identification of resistance mechanisms in herbicide-resistant weeds. 3) biology and control of invasive weeds in roadside and other non-crop areas. He teaches Principles of Weed Science and co-instructs a graduate course on Weed Science Research Principles and Techniques. He also serves as the Director for Undergraduate Programs in the Division of Plant Sciences.
Kremer speaks in Australia on soil health & crop productivity

Bob Kremer traveled throughout the wheatbelt of Western Australia for three weeks in September 2012 speaking at field days on soil health and crop productivity as part of the Department of Agriculture and Food-Western Australia (DAFWA) visiting specialist program. He also presented seminars at DAFWA regional centers and worked on potential collaborative research planning with DAFWA colleagues, presented a lecture to the Australian Herbicide Resistance Initiative group at the University of Western Australia-Nedlands, and participated and presented at the 7th Australasian Soilborne Diseases Symposium in Fremantle.

Miller speaks in Colombia to golf superintendents at seminar

Lee Miller was invited to present a one-day seminar to ~ 50 golf superintendents in Bogotá, Colombia on August 14th. Lee joined Dr. Scott McElroy from Auburn University to deliver a one-two punch of weed science and turfgrass pathology instruction. The Federacion Colombiana de Golf sponsored the two-day certification course, which serves as the only formal classroom training in turf management some of these managers ever receive. Superintendents flew or drove from all parts of the country, including Cartagena, Medellin, Bucaramanga and Cali to attend the course. “The climatic regions of the country were a shock as temperatures are governed totally by elevation, and are therefore constant. The students had no concept of seasons, and neither did the turf pathogens,” says Miller. Take all patch of bentgrass and large patch of kikuyugrass were perpetual problems in the mountainous regions, while dollar spot, Pythium, and brown patch were the most noted problems at lower elevations. While there, Miller also visited five courses throughout Bogotá and the surrounding area to advise superintendents and green committee members on turf issues.

Starbuck retires after 33 years of service at MU

Starbuck came to MU in 1979 after completing his Ph.D. at Oregon State. Initially, his appointment was teaching/research. He taught Plant Propagation and Nursery Crop production back when there were over 300 Horticulture majors. Since there were no TA’s, he spent 18 hours a week in the classroom and greenhouse. He conducted applied research, primarily focused on the Missouri Gravel Bed method for facilitating use of bare root nursery stock. As the Hort faculty shrank, he inherited Extension responsibilities as well, serving the needs of the nursery and landscape industries. The best thing about retirement, Starbuck says, is that he no longer has to pose as an expert on all things pertaining to the 2000 species of trees and shrubs that he is supposed to know about. He is keeping busy, but enjoying a more flexible schedule. He is working with the Mizzou Botanic Garden to help with mapping and accession records of plants on campus. He is also making presentations to various groups interested in using the Missouri Gravel Bed to facilitate urban tree planting projects. And, of course, he is glad to have more time to devote to photography.
Computer Knowledge

The new copy machines in both the Waters Hall and the Agriculture Building Division mail rooms have a scan-to-email feature. There is no charge for this service, but you do need a copy code to access the machine. Please ask Barb Worley or Rita Gerke for assistance if you do not already know how to use this service.

The University has a new Virtual Private Network (VPN) client that should be more stable when connecting to University resources from off campus. If you use an older VPN service, such as CISCO or AVAYA, please go to the following website to install the new client. Faculty and staff should use the "Employee GROUP when signing in. http://anyconnect.missouri.edu.

Secure Transmit is a new service available to faculty and staff that allows files and folders that are larger than 50 MB to be sent via an email link. The files are securely uploaded to a website that allows users both on and off campus to download on their end. Please contact Gary or me if you are interested in this service.

Get the goMizzou app for iPhone and Android. This FREE app provides access to the MU directory, an interactive campus map, news feeds, an events calendar, campus dining menus and feedback.

Find great on-line security tips at:
- Make IT Safe: IT Security at the University of Missouri
- OnGuardOnline.gov be sure to check out their Malware Educational Video.

FREE IT training is available to faculty, staff and students. There is a great new course on using your iPad in a university environment. See the full course catalog.

Administrative and Fiscal Offices have new home in Ag Building

This summer has been a very busy one for the DPS administrative and fiscal offices! As the fall semester is in full swing, things in the division fiscal office are just about to get back to normal. Along with the usual booking of budgets, closing the fiscal year and opening the new fiscal year, and processing annual raises we have also completed multiple renovation projects including the Division offices.

Administrative and fiscal offices for the Division of Plant Sciences are now located in the Ag Lab Building on the northeast corner of the building. The new address is 52 Ag Lab, and yes, we do have windows! This new location should greatly enhance the visibility of the Division. We still need to get signage added to the area, but otherwise we are pretty well settled. When you have a chance, stop by and say hi. We are proud of our new space and happy to have the opportunity to show it off.

Millikan Luncheon held September 21st

Plant Microbiology and Pathology Faculty and Graduate Students (Students for the Advancement of Plant Pathology) in the Division of Plant Sciences gathered for the 2012 Daniel F. Millikan Luncheon on September 21st at the University Club in the Reynolds Alumni Center. The Luncheon honors Daniel F. Millikan, former faculty member, who was a charter member of the Department of Plant Pathology at MU. The Millikan Endowment was established in 1997 through a gift of more than $1 million from the estate of Millikan.
KNOW YOUR COLLEAGUES:
The Greenley Research Center

The Lee Greenley Jr., Memorial Research Center is located in Novelty, under the direction of Randall Smoot, Superintendent for the last 36 years. Dr. Kelly Nelson, Research Agronomist and Associate Professor, joined Division of Plant Sciences at the Greenley Center in 2000. The staff consists of Jeremy Holman, Farm Worker II, Jenni Peak, Office Support Staff III and Chris Dudenhoefer, Research Specialist, who oversee the day-to-day research activities as well as assist on-campus faculty with on-going research at the 1,000 acre research facility including the Ross Jones Farm in Shelby County. Currently, Leah Sandler and Brendan Zurweller are pursuing M.S. degrees, and Pat Nash, Ph.D. candidate, are advised or co-advised under Dr. Nelson with projects at the Greenley Center. The primary research focus at the center has been on crop production on claypan soils which includes nearly 10 million acres in the Midwestern U.S., but the 120 head cattle herd allows for integrated cropping systems as well as livestock research. Partnerships with faculty in the Division of Plant Sciences are essential to provide farmers with current research based recommendations for claypan soils that affect profitable agriculture production in Northeast Missouri. The research center has worked with numerous faculty in the Division of Plant Science, and the College of Agriculture, Food, and Natural Resources, Division of Animal Science, School of Natural Resources, Agriculture Engineering, Agriculture Economics. This research has included field testing of new regulated genetic events in crops, variety development and testing, crop protection management systems, biomass management, intercropping systems, watershed management, subsurface drainage and drainage water management, agroforestry, economic evaluations of crop and livestock production systems, enhanced efficiency fertilizer management, organic cropping systems, cover crops and forage evaluations, timed artificial insemination, rotational grazing, and environmental monitoring of cropping systems.

The Lee Greenley Jr. family farm has had a long history of agriculture production that dates back to the late 1830’s prior to its dedication to research and outreach. From 1909 to 1918, Lee Greenley, Sr. operated the farm and employed several tenants. Lee Greenley, Jr. and Grace L (Caldwell) Greenley came to the farm in 1918 as a newly married couple. They lived on the farm for the remainder of their lives. During the Great Depression, the farm was foreclosed in two different parcels by loan companies. However, the Lee, Jr. family never moved from the farm. Lee Jr. purchased 187 acres in 1936 and the remaining 500 acres in 1943. An additional small acreage was added from a neighbor making the farm a total of 700 acres.

Personal ownership of the farm created added incentives to Lee Jr., Grace, and daughter, Hortense Greenley. Lee Jr. became known for the quality of cattle he produced and marketed as a result of good feeding practices. As the sole owner of the farm with the deaths of Lee, Jr. and Grace in 1965 and 1968, Hortense Greenley dedicated this land to her parents’ memories. The Lee Greenley, Jr. Memorial Research Center became part of Missouri’s comprehensive out-state research program in 1969, and was dedicated on October 6, 1974. Since then the center has been devoted to the mission of practical agriculture research.

The Greenley Center has seen some significant changes over the years. An energy house was constructed in 1978 to feature new technology during the energy crisis of the 1970’s. The house that was built around 1870 was restored by Miss Greenley from 1992-97. The house contains a room dedicated to the history of the Greenley farm and the Research Center, offices for the faculty at the center, and overnight rooms for visitors, researchers, and graduate students. The barn on site was rebuilt by Miss Greenley in 2000 as a lasting reminder of rural America and houses a corn crib and horse stall that was preserved from the original barn. One of the major events is the annual field day in August that highlights current research at the center. Currently, construction of a new crops laboratory building which will enhance the research efforts at the center with isolated storage for regulated crops which will enhance our abilities to field test new genetic events.
Around the Division

The Greenley Research Center provides sites for students to conduct focused research. Numerous students have used the Greenley Center as a research site to complete advanced degrees. Currently, there are five students that have ongoing projects. Patrick Nash is in his 2nd year of the Doctoral program. Patrick is evaluating the impact of managed subsurface drainage and polymer-coated urea on corn grain and forage production, as well as the amount of nutrients and sediment lost through the tile drainage water. Brendan Zurweller joined the Graduate Student program this spring with a focus on studying nitrogen transformations during flooded and non-flooded conditions under varying nitrogen sources for maximum corn yield response. Brendan is also examining trace gas emissions of methane, nitrous oxide, and carbon dioxide under the same flooding frequencies and nitrogen sources. Leah Sandler is in her first year of a M.S. degree in Plant Sciences. She is currently looking at the effect of inter- and double-cropping various alternative crops into winter wheat. Her main research focus will be to determine what the effects on wheat yields and if there are any benefits or drawbacks to the cropping system as well as what yields will be obtained from the alternative crops. Leah’s future plans are to take her research experience and knowledge from this project and move on to agriculture in developing countries by looking at and improving farming techniques and thus food security.

Ashley Schlichenmayer is currently working on her Master’s degree. Ashley’s project objective is to determine the response of water-hemp at different sizes (2-4 inch through 11-14 inch tall plants) to postemergence applications of different rates of dicamba and 2,4-D. Anomaa Senaviratne, Ph. D. Student, is understanding the long-term benefits of buffers by watershed model simulations. The annual field day is on the second Tuesday of August and provides an opportunity to educate agriculture clientele on new practices that are being evaluated and tested. In 2012, attendees from over 28 counties in Missouri, Kansas, Iowa, Minnesota, and Illinois gained knowledge on crop, pest, and livestock management.

We encourage you to come and visit the Greenley Research Center and see our continued work and efforts to evaluate efficient and profitable crop production in northern Missouri while emphasizing soil conservation, water quality and energy efficiency.

Recent Publications


The MU Wurdack Research Center held its annual Field Days on October 4-5, 2012. On October 4th, the Research Center hosted 775 high school students representing 21 schools. With an emphasis on agriculture and natural resources, talks covered a variety of topics from computer uses on the farm to training herd dogs. The event provided high school students the opportunity to talk with professionals from a variety of disciplines that included, law enforcement (highway patrol and conservation agents), fisheries biologist, plant nursery businesses, MU scientists, and farm managers. Farmers from the surrounding area attended the field day, October 5, to hear a variety of talks designed to assist in productive farm management. The event was titled “Securing Farm Profits for the Future” and included talks by MU researchers and specialists on herd management, hay & forage management, feed supplementation, and dung beetles for improved pastures. The event also highlighted a new program available to farmers, Quality Beef by the Numbers. The Quality Beef program emphasizes animal genetics and record keeping to track a farms most productive and valuable cattle. In spite of the rain and cooler temperatures, 67 producers attended the event.

Southwest Center Grazing School

The Southwest Center Grazing School, held September 26-28, 2012 at the University of Missouri Southwest Research Center in Mount Vernon, graduated a class of 36 graziers. Attendees garnered information on the art and science of grazing management including plant, fertility and soil basics. The group was instructed on layout and design of effective Management-Intensive Grazing (MIG) systems, livestock nutrition from pasture, and the economics of making a MIG system pay. Field exercises included determining pasture condition and pasture allocation. The group also toured two very different, but equally effective, systems that spanned the spectrum from low to high technology.

South Farm Showcase

Each year, the University of Missouri’s South Farm opens its laboratories and research centers to the public to share the fun and excitement of science and discovery. This event included live music, balloon rides, food, wagon rides, etc. This event is always perfect for the whole family! This year the South Farm Showcase was held Saturday, September 22 at the South Farm located at 3600 East New Haven Road, Columbia, Mo.
### Recent Grants

<table>
<thead>
<tr>
<th>Investigators</th>
<th>Title</th>
<th>Sponsor</th>
<th>Amount of Funding</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barrett, B.</td>
<td>Chestnut Weevil Monitoring: Developing a Comprehensive Strategy For Pest Management</td>
<td>Northern Nut Growers Association</td>
<td>$5,890</td>
<td>08/01/2012-07/31/2014</td>
</tr>
<tr>
<td>Bradley, K.</td>
<td>Monsanto Service Order #51</td>
<td>Monsanto</td>
<td>$4,000</td>
<td>04/01/2011-12/31/2012</td>
</tr>
<tr>
<td>English, J.</td>
<td>Enhanced Detection Methods for the Walnut Twig Beetle and Thousand Cankers Disease</td>
<td>Purdue University</td>
<td>$12,000</td>
<td>08/15/2012-08/14/2014</td>
</tr>
<tr>
<td>Fresenburg, B. Miller, L. Xiong, X.</td>
<td>Native Plant Gardens Demonstrating Sustainable Designs for Landscapes</td>
<td>Department of Agriculture</td>
<td>$13,930</td>
<td>09/24/2012-09/30/2013</td>
</tr>
<tr>
<td>Fritschi, F.</td>
<td>Developing Drought Tolerant Soybeans Using Extreme Phenotypes</td>
<td>United Soybean Board</td>
<td>$231,771</td>
<td>04/01/2012-03/31/2014</td>
</tr>
<tr>
<td>Lory, J.</td>
<td>Validate Improve and Regionalize Phosphorus Indices to Reduce P</td>
<td>Department of Agriculture</td>
<td>$531,622</td>
<td>09/24/2012-08/31/2015</td>
</tr>
<tr>
<td>Lory, J.</td>
<td>Maintenance and Enhancement of the National Nutrient Management Data Download Website (Missouri Clipper) and National Setbacks Database</td>
<td>Department of Agriculture</td>
<td>$20,000</td>
<td>09/20/2012-09/30/2013</td>
</tr>
<tr>
<td>Miller, G.</td>
<td>Evaluation of New Syngenta Products for the Control of Various Turfgrass Diseases</td>
<td>Syngenta Crop Protection, Inc.</td>
<td>$13,200</td>
<td>06/01/2012-12/31/2012</td>
</tr>
<tr>
<td>Nelson, K.</td>
<td>Drainage Workshop 2013</td>
<td>Department of Agriculture</td>
<td>$20,000</td>
<td>09/24/2012-07/31/2013</td>
</tr>
<tr>
<td>Nelson, K.</td>
<td>Agrochemical and Seed Evaluation Agreement</td>
<td>DOW Agroscience LLC</td>
<td>$3,000</td>
<td>03/1/2012-03/01/2013</td>
</tr>
<tr>
<td>Shannon, G.</td>
<td>Nested Association Mapping (NAM) of Genes Controlling Soybean Yield and Other Key Traits</td>
<td>University of Illinois-Urbana Champaign</td>
<td>$13,500</td>
<td>02/17/2012-09/30/2013</td>
</tr>
<tr>
<td>Shannon, G. Wrather, A.</td>
<td>Charcoal Rot Cultivar Evaluation Using Adapted and Exotic Sources of Resistance</td>
<td>University of Arkansas</td>
<td>$97,008</td>
<td>03/01/2011-02/28/2013</td>
</tr>
<tr>
<td>Stacey, G. Zhang, Z.</td>
<td>TRPGR: A genetic resource for gene discovery in soybean</td>
<td>University of Georgia</td>
<td>$132,114</td>
<td>03/01/2012-02/28/2013</td>
</tr>
<tr>
<td>Stacey, G. Zhang, Z.</td>
<td>TRPGR: Transposon tagging and fast neutron mutagenesis in soybean: Necessary resources to aid in the translation of genomics information into applied technologies</td>
<td>University Of Georgia</td>
<td>$35,000</td>
<td>10/01/2008-09/30/2012</td>
</tr>
<tr>
<td>Wiebold, W.</td>
<td>Soybean Extension</td>
<td>MSMC</td>
<td>$30,000</td>
<td>09/01/2012-08/31/2013</td>
</tr>
</tbody>
</table>