2012 Newsletter

WESTERN KENTUCKY UNIVERSITY

Department of Agriculture

Alumni:

Well it is time for the yearly update on the Department. I hope this newsletter finds all you well and able to manage through this difficult summer weather. We received some rain unlike so many that farm north and west of us. Our corn suffered the most, but our hay and soybeans have done well. The University purchased the Bennett Farm and turned it over to us. We were already farming the ground, but with the purchase, we hired a dozer and cleaned up the overgrown fence rows.

We allowed Potter College to build a structure for their wood-fired kiln near the Bennett Farm. With that addition, we now have the Art Department, the Department of Geography and Geology, the Department of Physics, the Department of Engineering, the Department of Kinesiology, and the USDA all with a stake in the long term health of the WKU Farm.

I hope you received a copy of the Summer issue of the Spirit Magazine. We appreciated the great coverage for our cheese production, the vineyard, and the WKU Floral Design Training Center. The cheese facility is almost complete. We are working to get all of our equipment certified so that we can start full scale production. The Taylor Center remodel is complete and will be open for tours during Homecoming.

We have cleaned up around the vineyard and flower beds, located in front of the Expo. You will be amazed at how good things look. We have also built more fence, allowing us increased flexibility with our grazing program.

The front of the farm along 31W will have a new look after the road construction is complete. The architect's drawings for the new entrance will be on display at the Homecoming Luncheon.

Our student numbers continue to rise, and we have an excellent crop of incoming freshmen. We graduated more than 80 students between December 2011 and August 2012 and 11 students were admitted to Veterinary schools.

There is much more going on than I can possibly tell you in this letter, so please, come and see for yourself.

See you at Homecoming,
Jack Rudolph

Dr. Amanda Gipe

Amanda Gipe is the newest faculty member in the WKU Department of Agriculture . Amanda is originally from Merced, CA where she grew up on a 700 acre farm/ranch. Her family raises purebred, registered Shorthorn cattle and grows corn silage, alfalfa, oats, and pasture hay. Amanda grew up showing livestock with her sister, Amy, and parents, Alpha and Sherri. Her family still runs the operation that now includes her brother-in-law, Tim, and nephew, TJ. Amanda served as a Board of Director for the American Junior Shorthorn Association and was the Alternate National Shorthorn Lassie Queen. Amanda completed her AA in General Agriculture from Merced College, where she was active in Ag Ambassadors, Young Cattlemen, Blue Devil Aggies, Livestock Show Team, and the Livestock Judging Team. She then transferred to Kansas State University and double majored in Animal Science and Food Science with a minor in Ag Economics. While an undergrad at KSU, she was on the Livestock and Meat Judging Teams and was a member of the Kappa Alpha Theta Sorority, Collegiate Cattlewomen, and Alpha Zeta. She received her Masters Degree from KSU where she helped coach the 2007 Meats Judging Team and coached the 2008 Meats Judging Team. Her masters' research looked at the effects of feeding DDGS and glycerol on pork loin quality. Amanda worked on her PhD at Penn State. She helped coach the livestock judging team from 2009 to 2012 and coached the RMC Undergraduate Quiz Bowl Team from 2009 to 2012. Her PhD research investigated the quality attributes and pathogen inhibition of "no-nitrate or nitrite-added" bacon. She is getting married in December to her fiancé, Russell McKeith, of Champaign, IL. Amanda is looking forward to working in the department and becoming more involved in not only department activities, but also Kentucky agriculture.

Inside this issue:

If you would like to receive the newsletter by e-mail, please send your e-mail address to:

agriculture@wku.edu

Horticulture in Scotland

The trip to Scotland with Mr. Roger Dennis and Dr. Linda Gonzales was the trip of a lifetime. The two weeks we were in Scotland were non-stop fun and very educational. While we were there, we had the opportunity to see so many unique places.

The Edinburgh Castle was one of the many sites we visited and dated back to the 12th century. The St. Andrews Castle ruins were incredible to see as well. Because it was a place where battles and wars occurred; it was like taking a walk through history.

While I was learning about Scottish history, it sparked an interest in me to learn more about my own country's history. Part of Scotland's unique history is their national flower, the thistle. We found this bizarre because in our country, thistles are considered weeds. It became the national flower because when Scotland's enemies would sneak up on them from the port, they would first take their shoes off. As they were sneaking up to the castle barefooted, they would walk in the tall grass. Thistles would prick them, and they would yell, which woke the people up and helped them to defeat the enemy.

Another aspect of Scottish history is the many chapels. As I walked through the 15th and 16th century chapels, I grew an appreciation for other religions besides my own. We walked through St. Mary's Cathedral in Edinburgh. The choir in the Cathedral was singing in Latinas we observed the chapel, and it sounded so beautiful. Sitting in the 15th century chapel admiring its beauty you can't help but appreciate the Scottish traditions.

The Sir William Wallace Monument in Stirling was one of everyone's favorite places on the trip. Sir William Wallace was one of the main leaders in the War of Scotland's Independence and fought for Scotland's freedom. The monument commemorates the 13th century Scottish hero. We walked up all 246 steps to the very top of the monument. There were no elevators to take us to the top; however, once we reached it, we had a breath-taking view of the city of Stirling and the steps were well worth it!

We visited so many beautiful botanical gardens along with all of the historical sites. As we visited gardens from the west and east coast, it was fascinating to observe the differences in temperature between the gardens from each coast. I enjoyed having the opportunity to tour the botanical gardens because it allowed me to see flowers I had used as cut flowers in Mr. Dennis's floral design courses growing in their natural state.

The Royal Botanical Garden in Edinburgh was established during the 16th century and has one of the largest collections of Chinese plants in the world. It was amazing to see plants that I had not previously had the opportunity to see. One of my favorite gardens we walked through was in tribute to Queen Elizabeth's mother. The Victorian Temperate Palm House was amazing to walk through, also. The house had ten distinct climate zones so that you could see plants from all over the world.

The orchid and cycad conservatives were gorgeous. The cycads were known to be around during the dinosaur age, so walking through the conservative was like walking through a time machine. The arid conservative was also very intriguing . The arid conservatory had aloe and agave in it, which are plants that have fleshy leaves that hold water. Seeing how the plants held water to survive was fascinating.

The Benmore Botanic Garden, a garden that grows on a mountain and known to grow a third of the world's winter hardy coniger species, was absolutely beautiful. The scenery as we walked up the mountain to see the garden was as breath-taking as the garden itself. On the mountain, they had Victorian Fernery, which became popular during the 18th century due to the people's interest in exotic plants.

One of my favorite places we toured on the trip was the Highlands. The mountains were absolutely stunning, and I could not wrap my mind around the magnitude and enormity of the peaks. They were a pure green with a tint of yellow goarse growing. We also saw heather growing on the mountains, and to remind me of the spectacular view, I bought a bracelet with heather on it that was made in Scotland.

For the golf lovers, one of the highlights of the trip was the opportunity to go to St. Andrews golf course, which is known as the "Home of Golf." Many golf players desire to play the course at least once before they die because it is so famous, and only champions play there. The manager of the St. Andrew's did a private presentation for us. In the presentation, he showed us a lay out of the golf course and how they take care of it.

At the St. Andrew's Botanical Garden, I was given the opportunity to see a rock garden. I had never seen one before, and it was magnificent. They had a large collection of alpine plants of all colors growing up between the rocks. Though it did not seem like it should have appeared graceful, the combination of the alpine plants and the rock was very tasteful.

The trip was overall an amazing experience for me to get to know my professor's and my fellow students in the Department of Agriculture as well as explore Scotland. It is a great class/trip for any student to take. It changed my life and my perspective of the world. I would not have missed the trip for anything.

Submitted by Danielle Berkshire

Scotland Trip 2013

Alumni and students are invited to send an email of interest to linda.gonzales@wku.edu or letter of interest to Dr. Gonzales, WKU Agriculture, 1906 College Heights Boulevard, Bowling Green, KY 42101 if they would like to receive more information about the Study Abroad class "Agriculture in Ireland and Scotland, 2013."

We are planning on spending one week in Ireland focusing on production agriculture and one week in Scotland focusing primarily on horticulture. Highlights will include an examination of how the Irish are able to successfully grow maize with the use of Maize Tech technology (planting into plastic), a visit to an Irish dairy, a visit to an Irish grain farm, visits to both Irish and Scottish historical sites, a visit to the Scottish Highlands, and in-depth examinations of the Royal Botanical Gardens in Scotland reviewing their great diversity.

Alumni and students may choose to participate in either the first week only or both the first and second week combined. More details will develop as our planning progresses!

Submitted by Dr. Linda Gonzales

2012/13 Agriculture Ambassadors

Drs. Thomas Kingery and Paul Woosley are excited about the opportunity to advise the Agriculture Ambassadors for the 2012/2013 academic year. Ambassador candidates were interviewed and selected by Agriculture Faculty in May of 2012. Approximately fifteen students applied, and the top eight students were chosen to be ambassadors. Dr. Kingery and Dr. Woosley deemed this group 'The Elite Eight' recently at an Agriculture Ambassador working retreat held at the Taylor Center on the University Farm. During the retreat, ambassadors worked on team building and planning and toured the University Farm along with the Floral Design Training Center. Pictured from left to right are**: Loren Gross** (Sophomore) Agriculture Education student from Hardin County, KY; **Kaidy Richardson** (Junior) Pre-Veterinarian student from Wayne County, KY; **Jaclyn Long** (Junior) Pre-Veterinarian student from Hancock County, KY; **Allison Brinkman** (Sophomore) Agronomy student from Dubois County, IN; **Ashley Egan** (Senior) Agriculture Education student from Bullitt County, KY; **Tyler Sadler** (Sophomore) Turfgrass Management student from Muhlenberg County, KY; **Shelby Sullivan** (Sophomore) Agriculture Education student from Laure County, KY; and **Caleb Thomas** (Junior) Agribusiness student from Larue County, KY.

Submitted by Dr. Paul Woosley

WKU Dairy Club

ROANOKE, VA, March 31, 2012 – Members of the WKU Dairy Club traveled to Roanoke, Virginia during spring semester to participate in the 11th Annual North American Intercollegiate Dairy Challenge®. The WKU team was comprised of four students, Leah Beth Dublin, Alison Emmert, Kyle Herrenbruck, and Tyler Wilson; Dr. Fred DeGraves, Department of Agriculture, provided coaching support. The contest attracted 128 students and 32 teams from across the United States and Canada. Virginia Tech and North Carolina State University hosted the competition.

The two-day competition provided a unique opportunity for students to develop team working, critical thinking, problem solving, public speaking, and dairy herd management skills. Upon arriving in Roanoke, the team received extensive records from the Jareco Farms dairy, LLC, owned by James and Jennifer Cook of Penhook, Virginia. The following day was spent reviewing the actual farming operation and interviewing the farm management group. Teams were then isolated from outside contact to develop recommendations for improving the function and profitability of the operation.

Recommendations for nutrition, reproduction, milk quality, milking procedures, herd health, housing, and farm economics were developed into a formal presentation. On the following day, their recommendations were formally presented to the dairy owners and a panel of five judges, each of which was recognized as an expert within the dairy industry.

Although the WKU Dairy Club team didn't win the overall competition, they provided numerous helpful suggestions to improve the dairy operation. The team members were in unanimous agreement that the Annual North American Intercollegiate Dairy Challenge® was an exceptional experience and were grateful for the opportunity to develop dairy management skills in an intense and competitive environment using information collected from a working dairy under actual farm conditions. Everyone went home a winner.

Submitted by Dr. Fred DeGraves

Viticulture News

The past year has been a busy and productive one for the WKU Viticulture program. Fall semester 2011 represented our first offering of our Advanced Viticulture class; five undergraduate and five graduate students completed the course this past December. The class completed several classroom and field-based requirements and also assisted myself, Roger Dennis (Instructor of Agriculture), Nathan Howell (Viticulture Technician), and Kellee McMillin (Graduate Assistant) with the harvest of approximately 2,500 pounds of fruit. Our seedless grapes were marketed to the Warren County City Schools, and our wine grapes were marketed to Crocker Family Winery of Franklin, KY.

2012 vineyard activities began with dormant pruning in March and April; the vineyards were utilized at this time to train 20 students enrolled in Introduction to Viticulture class in pruning and shoot thinning techniques. The class also assisted in our newest planting of wine grapes during the first week of May. Varieties planted this past May included 'Riesling,' 'Grenache,' 'Viognier,' and 'Cabernet Sauvignon,' among others. This summer has marked our initial offering of a field-based class entitled Summer Vineyard Operations. The six undergraduates who have enrolled in the class have learned and participated in various canopy management activities, learned how to install new trellising, installed netting to prevent bird damage, and visited a number of commercial vineyards including those of Crocker Family Winery, Cave Valley Winery, Hilltop Vineyards, and Reid's Livery and Winery.

In research news, Kellee McMillin continues her thesis research which investigates various fertility regimes and their influence upon grape yield and fruit chemistry. Kellee presented a portion of her 2011 data in poster format at the 2012 WKU Student Research Conference. Kellee will complete her research this fall and is on schedule to complete her degree in Spring 2013.

This past year we have hosted an increased number of individual and group visitors to our vineyards.

Groups visiting the vineyards this past year include the following:

- Leadership Bowling Green
- WKU Alumni College
- Allen/Warren County Beekeeper Association
- Larue/Hardin County Soil Conservation District
- Warren Garden Club
- Community Farmers Market
- WKU Summer Program for Verbally and Mathematically Precocious Youth (VAMPY)
- Numerous personal tours

We encourage you to stop by the vineyards for a visit; they are located just south of the L.D. Brown Agriculture Exposition Center.

Call (270) 745-3151

or email: todd.willian@wku.edu or nathan.howell@wku.edu

to schedule a visit !

Submitted by Dr. Todd Willian

Turfgrass Management News

Dear Alumni,

I hope you have survived the summer heat and drought. I would just like to update you on some of the activities in the department related to turfgrass management over the past year. I hope you were able to watch the Masters Tournament this year. As mentioned last year, five WKU Turf Students assisted in the yearly overseeding project at Augusta National. WKU turfgrass students are planning to do so again this August. Through last year's experience, one WKU student, Steve Haynes, secured a position at Augusta National. Steve graduated in December of 2011 and was able to begin work at Augusta prior to the Masters Tournament. Last year, I reported that Josh Blaker completed an internship with St. Andrews in Scotland. He graduated this spring and is working at Medinah Country Club in Chicago with a 2010 graduate, Dane Wilson. Medinah Country Club is the site of this year's Ryder Cup Tournament. Josh Blaker was this year's Outstanding Turfgrass Student. His resume included internships at Crosswinds Municipal Golf Course, Olde Stone Country Club, Valhalla Country

Turfgrass Management News Continued

Club, Augusta National, and the Old Course at St. Andrews.

Five students, Evan Jochim, Cameron Baker, Nathan Neely, Dean Hupman, and Landry Spears attended the GCSAA Trade Show in Las Vegas, NV this past January. Students earned money from the trip by working at Augusta National this past fall. During this trip, students had the opportunity to visit the Hoover Dam and the Grand Canyon. Evan Jochim graduated with Josh Blaker this past spring and currently is working at Victoria National with WKU Alumni, Bryce Poynter. We have three students interning with Victoria National this summer. Jerry Edmonds is currently completing an internship with the Milwaukee Brewers. He was sad to hear that the Brewers were unable to sign Prince Fielder before he left for Milwaukee. Evan Jochim and Lou Eckhart received scholarships from the KTC this past fall, $1500 and $1000 respectively.

From Josh Blaker's experience at St. Andrews, the WKU Turf Club renovated the green side bunker at the Taylor Center to a sod face bunker. It turned out great and has reduced maintenance.

Finally, I would like to close by updating you on current turfgrass research that is ongoing at the University Farm. Dan Sandor is beginning his second year towards a M.S. Degree. His research focus has been on controlling Bermudagrass in Tall Fescue. Dan is evaluating the effects of cultivars, mowing heights, and herbicide regimes on Bermudagrass Control. Dan has presented some of his initial findings at the Southern ASA Meetings in Birmingham, Alabama this past February and will be presenting again this fall at the National ASA Meeting in Cincinnati, Ohio. Dan has been a tremendous asset to our program and is also assisting with spring dead spot research in ultra dwarf Bermudagrass and other ongoing Bermudagrass control research being conducted at the WKU Farm. I hope to see you at Homecoming 2012!

Sincerely,

Paul B. Woosley

Claire Esch, 2012 Goldwater Scholarship Recipient

Claire Esch, the daughter of Joe and Carol Esch, graduated from the Gatton Academy in 2011. A previous recipient of the Greater Research Opportunity Fellowship from the Environmental Protection Agency, she is conducting research to find alternative fertilizers to reduce the pollution associated with nitrogen-based products.

"During my first few weeks at WKU, I knew that I wanted to work in the greenhouse," she said. She immediately met with Dr. Martin Stone, associate professor of agriculture, and discussed research ideas.

Now in her third year of research, Esch is planning to pursue a Ph.D. in plant ecology to continue research to make agriculture practices more sustainable.

"Clarice Esch is a fearless learner and an academic adventurer. Since coming to WKU almost three years ago she has been an exemplary student and an outstanding researcher," Dr. Stone said. "While earning a top grade in some of the toughest science courses on campus, she conducted research with minimum oversight and pushed our knowledge of nitrogen-fixing symbiosis much farther than it had been. Her future as a scientist is very bright, and she will make many important contributions to her field in the years ahead."

Esch said that she found out about her success via Facebook. "I wasn't expecting the news until later in the week. I was completely delighted and a bit shocked," she said. "Afterwards, I spent my entire afternoon working in the lab just to confirm my love for my work."

Cited from

http://wkunews.wordpress.com/2012/04/12/goldwater-2012/.

For more information on Claire Esch, a Horticulture major in the Department of Agriculture, and the work she will be doing during the 2012-2013 year, go to the Department's website:

www.wku.edu/agriculture.

There you will find another short article and a YouTube video depicting her work.

Novel Endophyte Tall Fescue Demonstration Trial

In September of 2011, a novel endophyte tall fescue demonstration trial was initiated. This trial was seeded into a horse pasture along Elrod Road. It was made possible with the assistance of Gary Lacefield, UK Forage Extension Specialist and WKU Alumni. The effects of endophyte infected 'KY 31' tall fescue has upon grazing cattle and pregnant mares are well known. Efforts in grazing endophyte-free tall fescue have been somewhat limited due to the lack of stand persistence of these tall fescues.

Recently, newer cultivars deemed 'Novel Endophyte' tall fescues have emerged. These cultivars contain an endophyte fungus that assists the plants hardiness, but does not produce some of the harmful alkaloids that reduce the health of grazing animals. Early research suggests that these new 'Novel Endophyte' tall fescues will persist longer under grazing compared to their endophyte-free counterparts.

The goals of this trial were to evaluate Novel Endophyte cultivars under grazing by equine, improve equine pastures on the University Farm, and provide a demonstration area that could educate local livestock producers. Through the efforts of Dr. Lacefield, five cultivars were obtained: Max Q, Texoma Max Q II, BarOptima, Estancia, and KY 93-01. The latter is an experimental cultivar developed by Tim Phillips, tall fescue breeder at the University of Kentucky. Each cultivar was seeded into approximately a two acre block. It was an excellent fall for establishing cool season grasses.

The winter of 2011/2012 was very mild and tall fescue continued growth throughout the winter. In early April, the tall fescue was harvested for hay. Yields were 2 to 3.5 tons of dry matter per acre on modest nitrogen fertility and sward height cut at four inches. Approximately 25 mares were allowed to graze regrowth through May. Initially, there appears to be no difference in preference by grazing mares and all cultivars exhibited excellent establishment. Grazing by mares will begin again this fall. Cultivars will be evaluated for persistence over time. The WKU Department of Agriculture thanks Dr. Lacefield for all his support with this project.

Submitted by Dr. Paul Woosley

And the Torch is Passed

This Spring just before school was out for the Summer the Department had a quiet luncheon to honor and say thank you to our retiring faculty.

Dr. Alvin Bedel, Dr. Jenks Britt, Dr. Gordon Jones, and Dr. David Stiles are all saying goodbye to the Department. Dr. Elmer Gray was also honored but he plans to continue until Dr. Woosley retires.

They have all contributed so much to our students, our Department, and our University. We can only strive to teach, advise, and inspire as they have for so many years.

We wish all of them well and may their retirement bring them and their families much joy.

Thanks for all the years,
Jack Rudolph

Agronomy News

Student News

Adam Madison, Josh Timbers, Marie Weldon, and Phillip Wheet participated in the 2011 Southern Regional Soil Judging Competition which was hosted by West Virginia University, Blacksburg, WV. Gary Cundiff & Bill Penick were graduate students who participated in the trip. Darwin Newton and Dr. Becky Gilfillen went with the group as coaches. The students placed 7th in the contest at WVU.

Gary Cundiff was the first recipient of the Elmer Gray Outstanding Graduate Student Award this spring. Gary has finished his M.S. in Agriculture with a focus on Agronomy-Soil Science, under the direction of Dr. Becky Gilfillen. He has now started a Ph.D. in Weed Science at Mississippi State University. We wish him every success with this pursuit.

Camille Hayden was the Outstanding Senior Agronomy Plant Science Student this year. She graduated in May and is working on a Master's Degree in Weed Science at Mississippi State University. We wish Camille the best in her endeavors at MSU.

In the spring, the Soil Fertility Class and the Agronomy Club had a field trip to Crop Protection Services and Waters Agricultural Laboratory in Owensboro. We appreciate all the support from our local Agricultural Industries and the time they take out of their busy schedules to provide tours.

Bill Penick has completed the course work for his M.S. in Agriculture and is currently working for Wheat Tech. Bill's thesis research was directed by Dr. Todd Willian and is entitled: *Transplanter Modification and the Determination of Functionality in No-Till Dark Tobacco Production Environments;* a portion of his research was presented in poster format at the 2012 WKU Research Conference.

Chris Ferguson recently completed his M.S. in Agriculture under the direction of Dr. Elmer Gray and is beginning a Doctoral program this fall at the University of Florida. Chris presented a paper at the Kentucky Academy of Sciences entitled: *Baby corn production as a niche crop for Kentucky growers and local markets* and has submitted a manuscript to the Kentucky Academy of Sciences Journal entitled: *Sunflower cut flowers as a niche crop for Kentucky families and local markets.*

Research

The Agronomy Faculty continues to focus on research in the area of Waste Management in cooperation with the USDA-ARS unit located at the WKU Farm. We are assisted in our efforts by undergraduate students Ashane Netthisinghe, Sarah Furlong, and Jared Moran and graduate students Dan Sandor and Kellee McMillin. We are continuing the two studies that were added last year.

One study investigates microbe survival in soil and fescue after poultry litter, dairy manure or inorganic fertilizer applications. Information about soil nutrient accumulation and fescue yields will also be determined in order to collaborate information between the study.

Our second project examines nutrient accumulation under a feedlot setting. In addition to soil samples, greenhouse gas samples are also being collected. The hopes of this project are to determine where excess nutrients from the field lot are accumulating and being released. Dr. Annesly Netthisinghe has been the principal investigator on this project and has used his expertise in GPS to allow a geo-spatial understanding of nutrient movement. He will be offering an integrated GIS team taught course this fall for both Agriculture & Geography Students.

Other research projects include the use of poultry litter and dairy manure as a fertilizer source to grow field and forage crops. Dr. Becky Gilfillen and Annesly Netthisinghe presented papers at the International American Society of Agronomy Meetings in San Antonio, TX. Dr. Becky Gilfillen also made a presentation at the Southern American Society of Agronomy Meetings in Birmingham, AL. She has served as President this past year for the Southern Branch of ASA and will be Past-President this coming year.

Dr. Elmer Gray continues to lead a number of field research projects, the majority of which are located at the WKU AREC. Among Dr. Gray's numerous trials are continued investigations into baby corn production, edible soybeans, black beans, utilization of waste paper as a mulch, and sunflowers for cut-flower production.

Dr. Linda Gonzales continues to be very active in providing domestic and international travel experiences for our students. Dr. Gonzales' most recent travel class visited Louisiana. She also accompanied Roger Dennis, Instructor of Agriculture, and seven students to Scotland this past June.

Submitted by Dr. Becky Gilfillen & Dr. Todd Willian

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