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Congratulations Graduates!

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# UT CASNR Chronicle

Spring 2013

Our faculty, staff and students have been busy this semester. Many exciting things have been happening in the CASNR family, and we are eager to tell you about them in this, our spring 2013 edition of the CASNR Chronicle!

*Caula Beyl, dean*

## New Facilities for Animal Science and Food Science

The long anticipated day arrived in early spring when Food Science and Animal Science faculty received word that they could now move into their new buildings. The two buildings combined represent 140,000-square-feet of space encompassing 28 research and teaching labs, 60 offices, eight classrooms, a 148-seat auditorium and a 900-seat arena.



Mike Davidson, department head of Food Science and Technology, said of the new building:

“The new Food Science Building will be of great benefit to our teaching, research and extension programs in the Department of Food Science and Technology. The new research laboratories will provide our outstanding biopolymer chemistry faculty with state-of-the-art facilities with which to carry out their cutting-edge research on food proteins, carbohydrates and physical properties to improve food quality and safety. The sensory center ranks as one of the best in the country and will allow expansion of our research and teaching programs in that area. The teaching laboratories in food engineering, product development, food chemistry/analysis and biotechnology will benefit all of our undergraduate and graduate students for their ‘hands-on’ experiences in food science. The new pilot plant will be a benefit to the teaching, research and extension programs and will allow us to expand our assistance to small and entrepreneurial food processors alike. In summary, the new facilities coupled with the excellent programs in the Department of Food Science and Technology put us in the top tier of related programs in the U.S.”

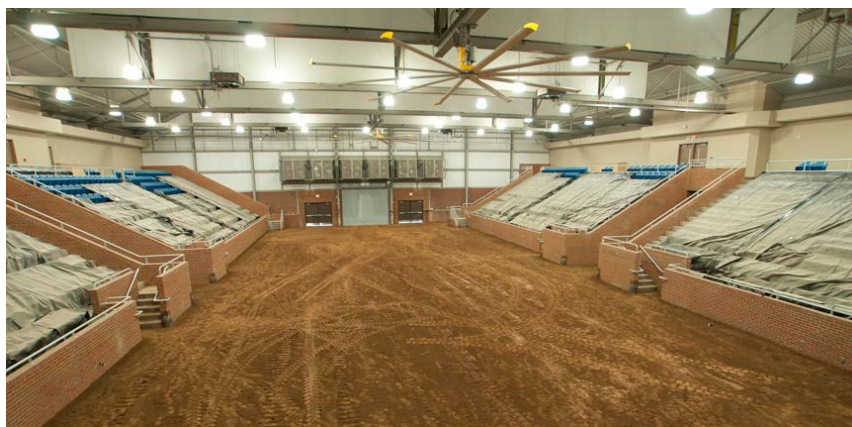


THE UNIVERSITY of  
**TENNESSEE**   
INSTITUTE of  
AGRICULTURE

Neal Schrick, head of the Department of Animal Science, said that “Having the ability to go straight from the classroom to the animal area with the connecting arena will improve the learning opportunities for our students immensely. Furthermore, the high-level biotechnology research laboratories will lead to



groundbreaking studies and even greater opportunities for our students to engage in these activities. With state-of-the-art classrooms and the arena connected, our extension activities with clientele bring producers and future students to our doorstep.”



The arena has already been in use as a location for the B&B Roundup on March 3 and the All East Collegiate Livestock Judging Contest held April 11-14. Some classes, for example, ANSC 360 Equine and Food Animal Evaluation, have used it as a location to examine cattle.

The arena is already in great demand for the summer for events such as the UT Animal Science Judging Camp, 4-H State Livestock Judging Contest, TFC Beef Bonanza, rabbit shows and regional sheep shows.



Students are enjoying the new buildings, and the only complaint has been that they tend to get lost the first few days. The two largest classrooms are not quite finished, so the fall semester students will be the first ones to enjoy having classes in them!



## Donnie Smith, President and CEO of Tyson Foods, is the Spring 2013 Graduation Speaker

CASNR is very proud to have one of its most accomplished alumni agree to speak to our graduates during the spring 2013 commencement. Donnie Smith graduated with a B.S. in animal science from the University of Tennessee. In 1980, he joined Tyson Foods where he worked in poultry operations in Tennessee for seven years before relocating to Arkansas, the location of the company's headquarters.



We are eager to hear the message that he has for our CASNR graduates, and we could speculate about some of the wisdom he will impart just based upon the life he has led since attaining his degree.

He might tell our graduates to keep on learning even after they have graduated. Right after graduation, Donnie joined Tyson and applied his animal science knowledge to poultry operations. After transferring to Tyson's corporate headquarters in Springdale, Ark., he added to his skills and expertise, serving in roles addressing commodities, logistics, purchasing, information systems, engineering, food safety and quality assurance, and finally environmental health and safety in 2006, 27 years after joining the company that he would eventually lead.

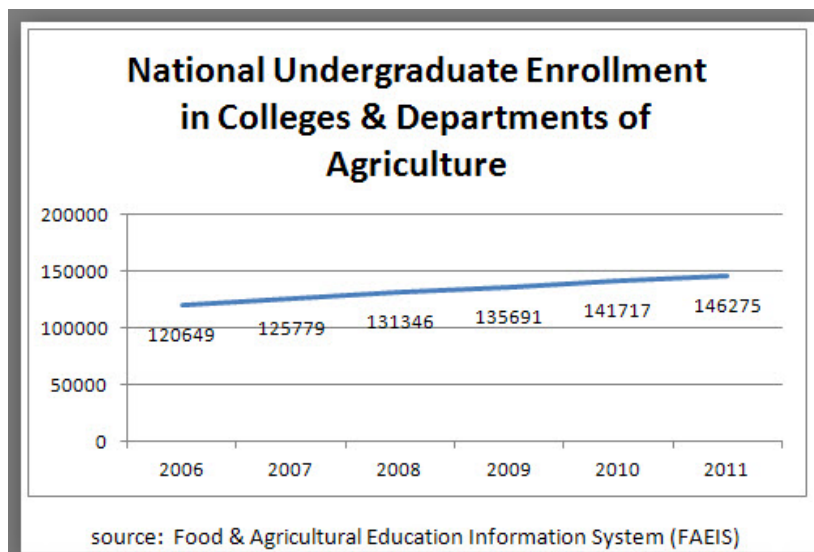
Another message may be to approach life with passion, enthusiasm and a conscience. Donnie Smith has certainly done that during his career. He is well-known for his

enthusiasm and his philosophy for the company. His excitement about the future of Tyson Foods has become a key part of the culture for the 115,000 Tyson team members. His vision encompasses Tyson Foods as a company "with a conscience, focused on feeding the world great, affordable food, while also making a positive difference in people's lives." Tyson truly invests in the values it espouses as is evident by its charitable focus on hunger relief in the U.S. and Puerto Rico. Sustainability is also part of the Tyson culture and value system with a strong emphasis on responsible environmental stewardship.

By achieving so much and being generous with his time and his talents, Donnie Smith could be sharing a philosophy that there is no limit to what our graduates can achieve once they have obtained their degrees. As a Tennessee native just out of college, could Donnie ever have imagined that in 2009, he would be appointed president and CEO of such a large and well-known company? His life and his successes are strong evidence that with drive, excellence and hard work, any one of our graduates this year could aspire to such a leadership role in the future.

## CASNR Enrollment Growth Exceeds National Undergraduate Enrollment in Agriculture

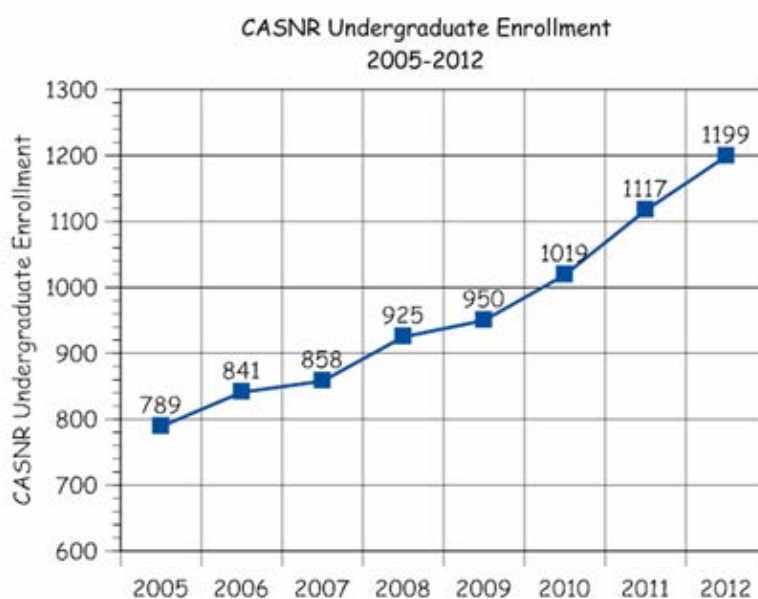
Across the nation, students are being attracted to agriculture majors in larger and larger numbers. The Food and Agricultural Education Information System (FAEIS) reports an increase in enrollment from 2006 to 2011 that amounts to 21.2 percent growth. CASNR has seen a 52 percent increase in enrollment since 2005, culminating in a total undergraduate enrollment of 1,199 students. In fall 2012, CASNR had 175 confirmed incoming first-year students. This year, as of the confirmation deadline date, CASNR has 191, continuing the upward trend in enrollment.



Some of the factors that may help to explain this increase are the projected outlook for jobs in agriculture, environment and related disciplines. The demand over the next 20 years is expected to greatly exceed the supply of trained graduates with undergraduate and graduate degrees. Many current professionals are expected to retire within the next five years, and this trained workforce must be replaced. Awareness of how critical it will be to produce food for the world population growth, the challenges faced by the impact of agriculture on the environment, and increasing competition for water and other resources will continue to drive the attractiveness of agriculture and environmental science disciplines.

Another factor that may be playing a role in the relatively bright job picture for CASNR graduates is the overall strength of agriculture in the state of Tennessee and the commitment of its governor to increase the profitability of agriculture and forestry in the state.

Graduates from CASNR are prepared to assume positions in the agriculture, forestry and environmental science professional worlds. Solid experiential discipline training coupled with internships give CASNR students the confidence needed to succeed.



## CASNR Learning Community Experiences Ag Day on the Hill

Fifteen students from CASNR's Living Learning Community attended Ag Day on the Hill at the state Capitol on April 2. The students sat in on the Ag Committee meeting, took a tour of the building, met various representatives from across the state, and talked to Tennessee's Commissioner of Agriculture and UT Board of Trustees member Julius Johnson. The students enjoyed the time with Johnson, who was gracious about being posed for a picture surrounded by them.



The CASNR Living Learning community is a unique residential and educational opportunity for students to interact with other students majoring in their same college (who are navigating the same life transition), faculty who teach in their majors, dean's office staff, and other campus partners. Research shows that students who are active participants with living-learning communities have a significantly greater probability of graduating, have a higher GPA, experience a stronger connection to the university, and are more active in university student life. It is not uncommon for students to study together and support one another in various other ways while navigating the transition from high school to college. Most students feel the strong cohesion created within the living-learning community among peers, and the college extends the connection beyond a community to that of a family.



After a full day of learning about state legislative processes, the students got a behind-the-scenes tour and saw a live newscast of WKRN-TV Channel 2 News in Nashville before heading back to the Knoxville campus. While at the news station, the students met head weather anchor Lisa Patton and Anne Holt Blackburn, a news anchor for WKRN-TV and a UT Board of Trustees member.

This trip will definitely not be CASNR student's last time to the Tennessee Capitol. There are plans in development now to take CASNR students to the state capitol and to the Ellington Ag Center!



## International Poultry Expo Connects Students with Jobs

How do 19 students get 87 interviews with 27 companies in three days? A group of students from CASNR did just that when they participated in the College Student Career Program sponsored by the U.S. Poultry and Egg Association. The program was held in conjunction with the International Poultry Expo. The group of nine undergraduate students, nine master's students and one doctoral student traveled to Atlanta in January, accompanied by Emily Gray, CASNR director of student services, and Mary Mahoney, UT Career Services assistant director.

"This is a tremendous chance for any CASNR student to experience the extensive, and sometimes overwhelming, magnitude and complexity of the poultry industry," said Gray, who has seen the program grow over the past few years and hopes more students will take advantage of the opportunity.

Students submitted resumes and scheduled interviews in advance of the trip for both full-time jobs and internships. While at the expo, students had additional opportunities to network with companies from all over the world. Many students were also able to interview with companies outside the formal interview schedules.

"It is a great event to gain interview experiences, learn about the poultry industry and its advanced technologies, network with industry individuals, and also for self-awareness and professional development," said Chayapa Techathuvanan, a doctoral student in food science.

The International Poultry Expo celebrated 65 years of service to the poultry and egg industry this year. The expo is now the world's largest gathering of industry leaders and the most comprehensive display of the latest technology, equipment, supplies and services used by poultry and egg companies. This year's expo featured more than 1,175 suppliers and more than 25,000 attendees from more than 100 countries.

"The experience was wonderful. I got the opportunity to connect with major companies but also with others students in the same career field," said Bridgshe Hardy, a master's student in food science.

Donnie Smith, a CASNR alumnus and CEO of Tyson Foods, treated students to a keynote address. He provided inspiration by sharing his success story and gave a realistic, thought-provoking forecast of the future of agriculture including the tremendous challenge of feeding the expanding world.



"The International Poultry Expo really opened my eyes and made me realize what I am learning is going to benefit our world," said Xiaoci Ji, a biosystems engineering technology master's student.

Joseph Summers, a master's student in animal science, summed up his feelings about the event. "If you have never been to the International Poultry Expo, your education is incomplete," he said.



## Chancellors Awards Recipients, Spring 2013

### JOHN RILEY — OUTSTANDING TEACHING AWARD

John Riley, professor of agricultural economics, has been a member of the UT faculty since 1995. After serving almost four years as dean of the College of Agricultural Sciences and Natural Resources, he returned to the classroom, where he teaches courses about the job search process and marketing and sales communications in addition to agricultural economics. Riley dedicates much of his time to advising, with 45 undergraduate



students and two at the master's level. He also coaches UT's National AgriMarketing Association Student Marketing team, which competes with more than 30 teams from the United States and Canada. He is the longest-serving coach for this competition and has received two NAMA outstanding adviser awards. In fact, the organization recognized his commitment by renaming the award in his honor. In the words of one of his students, "Dr. Riley is disciplined and dedicates his time and efforts into making sure that every student succeeds. He's a good man and a great professor. I wish every single one was like him."

### DAVID GOLDEN — OUTSTANDING TEACHING AWARD

An award-winning educator and researcher in Food Science and Technology, David Golden infuses his courses with humor and real-world stories. His students say this style of teaching helps them remember what they have learned. He teaches about the impact of people and historical events on the production, distribution and consumption patterns of food as well as the role of food in society and culture. His lessons have titles like



"Two All-Beef Patties, Special Sauce ... A History of Hamburgers" and "Got Milk? Louis Pasteur's Contributions to Food and Society." He invites guest lecturers from other UT departments and from food companies like Bush Brothers. Golden's light-hearted approach and sincere interest in his students and their lives have earned him teaching evaluations that are positive nearly across the board. Golden's professional experience includes work for the U.S. Food and Drug Administration and as a visiting research scientist for the Commonwealth Scientific and Industrial Research Organization in Australia. He is a faculty fellow for the Haslam Scholars Program and will serve as president of the Faculty Senate next year.

### MICHAEL O. SMITH — READY FOR THE WORLD AWARD

Michael O. Smith, an animal science professor, helps his students get Ready for the World while also leading them in research to help solve many global food problems. He's taken nearly 100 students to Jamaica, Thailand, Vietnam and Ghana during the past decade. He teaches International Experience in Agriculture and Natural Resources, a class that involves a semester of coursework on a country's agriculture, government and



culture followed by a two-week study tour of the country. Smith also has won two federal Higher Education Challenge Grants to coordinate international experiential learning for students. One of those grants funds programs focusing on minority, low-income and first-generation students. An expert on the effects of heat stress on poultry production, he also has consulted in Egypt, Jordan, Romania, Thailand and Turkey.

### **QIXIN ZHONG — PROFESSIONAL PROMISE AND CREATIVE ACHIEVEMENT AWARD**

Qixin Zhong's research program focuses on improving our food's safety, quality and healthfulness through the application of biophysics and nanotechnology. Specifically, the associate professor of food science and



technology's research program focuses on the discovery of physically inspired materials and processes through the creation and understanding of nanoscale materials. Zhong's research has so far generated a total of eight patents and invention disclosures. His accolades include the Institute of Food Technologists 2012 Samuel Cate Prescott Award for outstanding work in

food science research, one of the highest individual honors presented by the organization. Additionally, Zhong has mentored nine doctoral students and seven master's students and helped establish the Food Biopolymers Research Group in the Department of Food Science and Technology. Zhong serves as an associate editor of the journal Food Biophysics and is an editorial board member for three other journals.

## **Advisers Corner**

Each year, we celebrate the commitment of our faculty advisers. We would like to share a few of the comments made by our students that are testament to the dedication of those advisers who serve them so well.

From senior exit interviews in Agricultural Resource Economics:

*"Faculty are very personable and advisers are more like friends – even from transfers who said it was more so here than in [their] community college."*

From senior exit interview in Forestry, Wildlife and Fisheries:

*"I felt the faculty truly cared about students and their future."*

An in response to the question, "What did you like about the Department of Food Science and Technology?"

*"My adviser's open-door policy."*

*"My adviser knows me and even helped with at a personal level."*

*"My adviser let me stop by and see them without an appointment. I liked the one-on-one engagement."*

*"My adviser helped me fit in to a new school (UT) and the Department."*

*"Advisers are accessible."*



## Food Science and Technology Program Review

The program review for the Department of Food Science and Technology was conducted Dec. 3-5, 2012, by a review team consisting of Jean-Francois Meullenet from the University of Arkansas; Joe Marcy from Virginia Tech; and Eric Drumm, Barry Bruce and Kim Jensen from the University of Tennessee. FST is notable for many reasons. It is among the top five in the nation for enrollment and the top or close to the top for number of minority students enrolled. It was noted for having truly cutting-edge and innovative research that positively impacts its graduate students. The outlook for FST graduates is excellent, with food safety being one of the NIFA priority areas and projected to receive significant funding in the next 10 years. Also, the projected demand for FST graduates is 10 times the current supply and is predicted to increase over the next 20 years. Advising was touted as one of the many strengths of the department. Reviewers recommended that experiential learning be strengthened by the addition of tenure track faculty capable of teaching advanced techniques labs and mentoring graduate students.

## Forestry, Wildlife and Fisheries Program Review

The program review for the Department of Forestry, Wildlife and Fisheries was conducted Dec. 3-4, 2012, by a review team consisting of Robert Swihart from Purdue University; Terrell Baker from the University of Kentucky; and Gary McCracken, Delton Gerloff and Michael McEntee from the University of Tennessee. The value of the department was reaffirmed, particularly in a state where natural resources contribute so much to the economy. Two focus areas were singled out as having flourished since the last program review: the Tennessee Forest Products Center and the Center for Wildlife Health. Collegiality and collaborative spirit in the department was praised as was the quality of the new faculty hires. Recommendations were made to increase the teaching FTEs by adding a lecturer position, refilling the faculty position association with biometry, and enhancing the Extension representation in fisheries.

## Urban Forestry Concentration Climbing (Literally)

The urban forestry concentration, the newest under the forestry major, is an interdisciplinary program emphasizing forestry, arboriculture, horticulture, urban forest management and urban wildlife. In addition to the general education courses, the urban forestry curriculum includes core courses in the traditional forestry discipline. The curriculum is designed to prepare graduates who can evaluate, plan and resolve problems in an urban and traditional forest.



## CASNR's Sigma Alpha Chapter Wins Four National Awards

The Theta Chapter of Sigma Alpha at the University of Tennessee, founded in 1990, participates in the society's national philanthropy, Ag in the Classroom, each year to teach agricultural awareness in students ranging from elementary grades to high school. Chapter members are also involved with Boo at the Zoo and the Ronald McDonald House. The chapter's two big fundraising events each year are selling Men of the Ag Campus calendars around the holidays and auctioning off dates with students in its Stud Auction in the spring.

The 2012 Sigma Alpha national convention was held in mid-October in Omaha, Neb., with the theme, Professional Women: From Boots to Business Suits. Three representatives from the Theta Chapter — Lockard Cassity, webmaster MiKayla Goodman, and President Brenna Goodwin — attended the event. The Sigma Alpha Convention even had special guest Miss America 2011 give pointers about what she has learned from being a professional female role model. She definitely made an impression on Cassity, who commented, "The way she spoke about how she went from being a normal home-schooled girl to the youngest to win the Miss America title in decades was truly inspiring, especially because she has chosen to be an advocate for agriculture specifically."

At the national convention, the Theta Chapter won four awards including Emerald Chapter, first place in scrapbook, first place in website and the Founder's Cup. The first-place award for the scrapbook is awarded to the chapter that maintains the most outstanding chapter history in a scrapbook. The first-place award for the website is presented to the chapter with the most informative, creative and professional chapter website. The highest award recognized by Sigma Alpha National Sorority is the Founder's Cup for the chapter that most excels in scholarship, leadership, service and fellowship and participates in nationally recognized activities.

Additionally, several sisters of the Theta Chapter received the Emerald Scholar Award for maintaining a 3.75 or higher cumulative GPA through the previous fall semester. Emily Gray, chapter adviser, said, "I am very proud of the Theta Chapter's growth and achievements recognized by these national awards. We have a great group of sisters who live out the Sigma Alpha motto of exceling in agriculture."



## Wildlife Society Takes Second Place Nationally

The University of Tennessee's Student Chapter of the Wildlife Society took second place overall in the 2013 Southeastern Wildlife Conclave hosted by North Carolina State University at Southern Pines, N.C. The 20-member student team, co-advised by David Buehler and Emma Willcox from the Department of Forestry, Wildlife and Fisheries, competed against 21 other college and university wildlife programs. The Southeastern Conclave is an annual event that brings over 450 wildlife students, educators and professionals together for three days of workshops, field trips and competition. The University of Tennessee hosted the first Southeastern Wildlife Conclave in 1972 and hosted last year's event at Fall Creek Falls State Park. The UT Knoxville Student Chapter competed against the University of Georgia, University of Florida, Virginia Tech University, University of Maryland, Auburn University, LSU, Mississippi State University, University of Arkansas and Clemson University, among others. Competitions included a double-elimination Quiz Bowl tournament and an outdoor Team Field competition that tested a broad range of wildlife technical skills. Individual events included radio telemetry, obstacle course, archery, rifle, shotgun, orienteering, dendrology, canoeing, fly-casting, wildlife art and photography, and a lab practical. Excellent scores across the entire range of events led to UT's overall second place finish.



### Awards:

Team Field Competition: Third Place

Quiz Bowl: Fourth Place (Max Cox, Conner England, Andrew Isenhower and Teresa Moody)

Canoeing: First Place (Phillip Stephenson and Glen Searcy)

Obstacle Course: Sixth Place (Nathan Wilhite, Alex Jackson, Drew Mallinak and Grant Self)

Dendrology: Second Place (Andrew Isenhower)

Essay: Fifth Place (Celina Scott)

Lab Practicum: Fourth Place (Teresa Moody)

Overall: Second Place



UT Quiz Bowl Team from left to right, Connor England, Max Cox, Teresa Moody (team captain) and Andrew Isenhower.



## Forestry Team Takes Eighth Place Nationally

At the 56th annual Southern Forestry Conclave held in Auburn, Ala., on March 14-16, the University of Tennessee Forestry Team finished in eighth place and for the third time in four years, the team won the



Sportsmanship Award! The team's performance in two events really stood out this year. In the Stihl competition, consisting of the stock saw, the standing block chop, the single buck, and the underhand chop, Jack Lipkin won second place.

UT's Jack Lipkin, right, won second place in the Stihl competition, which consisted of the stock saw, the standing block chop, the single buck and the underhand chop. Lipkin and Tyler Nutter placed third in the cross cut competition.

Competition is always fierce in the conclave and consists of 14 different colleges from across the entire southeastern U.S. competing in events that test both physical and technical lumberjack skills. The team benefitted greatly this year from volunteer training provided by a former team member, Adam Lethco, who is a lumberjack at the Lumberjack Feud Theater in Pigeon Forge, Tenn.



## UT Food Science Takes Second Place at Institute of Food Technologist's Midwest Regionals

The 2013 UT Food Science and Technology College Bowl team finished in second place at the Institute of Food Technologist's Student Association Midwest College Bowl Competition in Champaign, Ill., at the University of Illinois on Saturday, April 20. The College Bowl is a knowledge-recall competition between IFT-approved food science departments across the U.S. and is split into eight regions. UT is in the Midwest Region with the University of Illinois, Purdue University, Ohio State University, University of Kentucky and Michigan State University.



College Bowl Team members Kristen Higginbotham, Wei Chen, Maneesha Mohan, Leah Odom and Jack Johnstone traveled to Champaign, Ill., to compete in the Institute of Food Technologists Student Association Midwest College Bowl Competition. The UT team finished second in the tournament.

UT opened the double elimination tournament by losing to last year's regional champion Purdue University. However, in the loser's bracket they bounced back and defeated Illinois, Ohio State and Kentucky to gain a rematch with Purdue. In the first game of the championship round, Tennessee defeated Purdue to set up a winner-take-all match. In the final, however, UT was defeated by a strong Purdue team who will now represent the Midwest Region in the national IFT College Bowl tournament in Chicago. On a positive note, UT team captain Maneesha Mohan was named the most valuable player for the Regional Tournament.

The team members were graduate students Mohan, Wei Chen and Kristen Higginbotham and undergraduate students Leah Odom and Jack Johnstone. Other team members who contributed but were not able to make the trip were undergraduates Shelly Austin, Kemia Amin and Maddison Suchomski. The team was coached by faculty members John Mount, P. Michael Davidson and Karen Jones.

## Turf Students Excel at Golf Industry Show Quiz Bowl

Turfgrass science and management students from programs across the nation gathered in San Diego to pit their skills against those of their peers in the 19<sup>th</sup> Annual Collegiate Turf Bowl, sponsored by John Deere Golf. Two hundred forty-seven students on 68 teams from 35 schools took part in the competition. The University of Tennessee's turfgrass science and management program was represented by students Jacob Reagan, Dalton Wayman, Cory Yuriscic and Wes Mackie. Their efforts were rewarded by a 10th place finish, something that the team has not accomplished in recent years. The team was assisted in their preparations by graduate students David Shell and Eric Reasor. The group is advised by Brandon Horvath and John SoroChan.

Traditionally, this competition has been dominated by Iowa State and Purdue University, but this year, changes to the exam resulted in an upset to the schools that made the top 10. Three of the four UT team members will return for the 2014 Turf Bowl, so we expect great things to continue. The fourth team member, Wes Mackie, graduates this spring and will begin a position at a prestigious golf club just outside New York City. The remaining students from the team have all embarked on their summer internships, including Jacob Reagan who is currently overseas at Finca Cortesin Golf Resort near Malaga, Spain.





## CASNR Students Shine at EURēCA

Novel research addressing food safety, biofuels, food security and climate change needs, as well as innovative engineering solutions to problems in agricultural production and natural resource management, were featured at the 17<sup>th</sup> Annual Exhibit for Undergraduate Research and Creative Achievement (EURēCA). Ariel Buehler's research on food safety was awarded the Phi Kappa Phi Award, an exhibition-wide prize. Her exhibit was titled "Microgreens: Use of Green Fluorescent Proteins to Evaluate Antimicrobial Efficacy." Six students' exhibits were recognized as top projects in CASNR: William Barbour (Paul Ayers, mentor), Samantha Brown (Jun Lin, mentor), Ariel Buehler (Faith Critzer, mentor) and Anthony Cicco (Doris D'Souza, mentor), Joshua Grant (Neal Stewart, mentor), and Chelsea Johnson (Neal Stewart, mentor). Ryan Hodges, Brandon Massengill, Brittani Perez and Chanci King, a team of biosystems engineering students mentored by John Wilkerson, were recognized as one of the best projects in the College of Engineering competition. All division award winners received \$200 from the Office of Research and \$150 from Gamma Sigma Delta, the honor society of agriculture. Gamma Sigma Delta sponsored a second exhibition of the EURēCA projects at their annual spring initiation banquet.

A total of 30 CASNR-affiliated projects competed in EURēCA. CASNR faculty mentored students from CASNR as well as students from the College of Engineering; College of Arts and Sciences; and College of Education, Health and Human Sciences. In addition, one CASNR student was mentored by a faculty member from the College of Arts and Sciences. CASNR projects were judged by a panel of faculty including Robert Augé, Richard Gerhold, Dayton Lambert, Mary Rogers and Rebecca Trout Fryxell. For additional information on CASNR undergraduate research or participation in EURēCA, please contact Kimberly Gwinn, CASNR coordinator for Honors and Undergraduate Research Programs.



**William Barbour**

Project: [\*Design of an Underwater Video and GPS Mapping System for the Exploration of Streambed Aquatic Populations\*](#)

Faculty Mentor: Paul Ayers

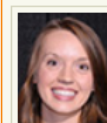


**Samantha Brown**

Project: *Cj0843c, a putative lytic transglycosylase, contributes to beta-lactam resistance in Campylobacter jejuni*

Faculty Mentor: Jun Lin

### Phi Kappa Phi Award Winner



**Ariel Buehler**

Project: *Microgreens: Use of Green Fluorescent Proteins to Evaluate Antimicrobial Efficacy*

Faculty Mentor: Faith Critzer



**Anthony Cicco**

Project: *Comparison of grapeseed, pomegranate, and cranberry extracts against salmonella enterica serovars Typhimurium and Enteritidis*

Faculty Mentor: Doris D'Souza



**Joshua Grant**

Project: [\*Functional analysis of a putative membrane-bound endo-β-1-4-glucanase from Panicum virgatum\*](#)

Faculty Mentor: Neal Stewart



**Chelsea Johnson**

Project: *Molecular characterization of herbicide resistance in horseweed (Conyza canadensisL.)*

Faculty Mentor: Neal Stewart,

## Innovative Recruitment — CASNR Partners with the City of Knoxville for its Step Show College Fair and Tour

CASNR, in collaboration with the city of Knoxville's E.V. Davidson Center, hosted the "Premiere Teen Step College Tour and Fair" on March 8-9, 2013, at the University of Tennessee. Participants included middle and high school students from Knoxville, Tenn., Chattanooga, Tenn., Smyrna, Ga., and St. Louis, Mo., representing a total of 15 schools. The students learned about college admission standards, interacted with faculty representing the seven departments within the College of Agriculture and Natural Resources, toured UT Knoxville and UTIA campus facilities, networked with undergraduate and graduate students, and were given the opportunity to see an interactive video titled "The Future Belongs to You" (USDA-HEC grant funded). At the end of this short video, students were able to remember and talk about the five USDA priority areas:

- Keep American agriculture competitive while ending world hunger.
- Improve nutrition and end child obesity.
- Improve food safety for all Americans.
- Secure America's energy future through renewable biofuels.
- Mitigate and adapt agriculture to variations in climate.

In total, 120 students attended this event. CASNR will host another college tour on May 10 for 120 rising juniors from Fulton High School in Knoxville, Tenn.





## Innovative Recruitment — CASNR Partners With Girl Scouts for Gadget Girl Adventures in STEM

The Gadget Girls program was initiated in 2011 through an agreement between the Girl Scouts Council of the Southern Appalachians and the University of Tennessee, Knoxville. The 2012 program was directed and organized by Bonnie Ownley with the support of Caula Beyl, dean of CASNR. Facilities for the lab activities and group meetings were provided by CASNR and the College of Arts and Sciences. Funding for activity supplies, lunch and snacks, and transportation to different laboratories on campus was provided by CASNR. The Girl Scouts Council was responsible for advertising the event and registering the girls and adult leaders. The majority of the participants were Girl Scouts, but all middle school girls from East Tennessee were eligible to participate.

On November 17, middle school girls from East Tennessee experienced a taste of research in the biological and physical sciences and mathematics at the University of Tennessee, Knoxville. By participating in several different hands-on laboratory experiments and activities, the girls were introduced to many scientific methods and principles and career opportunities for women in the science, technology, engineering and mathematics (STEM) disciplines. The primary reason that Gadget Girls was hosted by CASNR and UT Knoxville is that one of the greatest educational challenges in the nation and in Tennessee is producing more female students who are well-prepared in the STEM fields.

The girls were placed in small groups and rotated through the eight different 45-minute activities; each group was allowed to participate in four of the eight activities:

- CSI Soils
- DNA Necklace
- Agarose Gel Electrophoresis
- Decode DNA
- Math Triangles
- Fun with Chemistry
- Optics
- Plant Tissue Culture



Female faculty, staff, and graduate and undergraduate students from CASNR and the College of Arts and Sciences volunteered to plan and lead educational activities as part of their commitment to encourage STEM education for girls. They served as adult role models for the girls to make the Gadget Girls 2012 program an exciting all-day event of hands-on STEM activities for 72 girls, their leaders and parents. We appreciate those from the CASNR dean's office; Biosystems Engineering and Soil Science; Entomology and Plant Pathology; Forestry, Wildlife and Fisheries; and Plant Sciences who volunteered in such a worthwhile program. Plans are already underway for next year's event!



## From the Entire Dean's Office, Congratulations to Our Graduates!

This spring and summer we are celebrating the successful graduation of 170 B.S., 33 M.S. and five Ph.D. degree recipients. All of these students have been given the best tools to succeed that we can provide, and we know that they will go forth and become leaders in the agricultural and environmental professional world. Go Aggie Vols!

