third Thursday

THE UNIVERSITY of TENNESSEE INSTITUTE of AGRICULTURE

Nov-Dec 2009



Joe DiPietro

UT Institute of Agriculture Programs Receive Federal Appropriations

Five promising research projects conducted by UTIA scientists have received federal funding to help advance their work. Thanks to the support of Tennessee Congressional representatives, the projects have been awarded a total of $5.2 million in federal appropriations for FY 2010. **Senator Lamar Alexander, Congressman Lincoln Davis and Congressman John J. (Jimmy) Duncan, Jr., all helped to sponsor the funding.**

Programs receiving funding are:

• $1 million for scientists to continue their efforts to understand and improve the sequestration of carbon in plants, particularly energy crops, and to develop feedstock for biofuel production.

The funding will also contribute to the state's ongoing effort to develop technology for the production, harvesting, and transportation of energy plants, particularly switchgrass, for biofuel production. Faculty from the Department of Plant Sciences, the Department of Biosystems Engineering and Soil Science as well as the Office of Bioenergy Programs are expected to collaborate on the effort.

• The project "Phytosensors for Crop Security and Precision Agriculture" was also awarded $1 million. This project combines state-of-the-art technologies in biotechnology and photonics to produce crop plants that can be used as early warning sentinels for the detection of plant disease. Scientists in the Plant Genetics Lab in the Department of Plant Sciences are genetically modifying plants to emit a unique spectral signature in early stages of infection, that is they would "change color" before a farmer would normally detect other signs of infection.

• A new budget line of $400,000 to continue research in wood utilization in the UT Forest Products Center. This funding will support research activity in developing new technology for statistical process control and adhesion between wood and plastics.

• An additional $500,000 in funding was awarded to a **team of faculty in the Department of Entomology and Plant Pathology for improving hemlock health in Tennessee.** This project involves research to enhance the development and implementation of management techniques to control the Hemlock Woolly Adelgid.

• A new budget line established by USDA's National Institute of Food and Agriculture will provide $2.3 million for the Sun Grant Initiative. The Sun Grant Board, representing the five universities that serve as Regional Sun Grant Centers, hopes to increase the budget line by working closely with the President's budget request in the years ahead. UTIA serves as the Southeastern Regional Sun Grant Center.

I'm grateful for the efforts of **Buddy Mitchell**, UTIA associate vice president for development, and **Kurt Schlieter,** associate vice president and director of Federal Relations, who helped to make our representatives aware of our efforts as well as for the cooperation of the **Tennessee Congressional representatives who helped sponsor the funding.** We always appreciate the support that our representatives show for our scientists' initiatives, which are aimed at improving the quality of life in Tennessee and the nation.

I wish you and your family the best for the holiday season and thank you for all that you do for the Institute throughout the year.

Joe

To read more about each of these projects, visit the Institute's Web site at www.agriculture.utk.edu/news/releases/ and look for the story in October '09.

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HOLIDAY EXPRESS at the UT Gardens



Bill Brown

NIFA Replaces CSREES

What Does This Mean for UTIA Programs?

By Bill Brown, Dean of Research and Director, UT AgResearch

Beginning this month, the National Institute of Food and Agriculture (NIFA) replaces the Cooperative State Research, Education and Extension Service (CSREES). This new institute is designed to raise the awareness of agriculture, natural resources and family-communities within the national agenda and to increase the importance of these issues to a level experienced with issues addressed by other institutes within the federal government such and the National Institutes of Health (NIH) and the National Science Foundation (NSF).

President Obama has appointed Roger Beachy, former director of the Danforth Plant Science Center in St. Louis, MO as the first administrator of NIFA. Beachy is a plant pathologist by training and is a member of the National Academy of Sciences; he will serve a six-year term. A great deal of excitement has been generated about the USDA Agriculture and Food Research Initiative (AFRI). AFRI is a new competitive grant program to provide funding for fundamental and applied research, extension, and education to address food and agricultural sciences competitive grants program receiving an increase in funding to $260 million for next year.

In his address announcing the launch of NIFA, Secretary of Agriculture Tom Vilsack highlighted five USDA focus areas which are nicely aligned with UTIA programs: global food security and hunger, climate change and the environment, sustainable energy, nutrition and childhood obesity, and food safety.

In the future, it is clear that a greater emphasis for federal programs will be placed on competitive awards. It is also very likely that future efforts to increase federal funding for agricultural programs through USDA will be focused on increases through the AFRI competitive grants program rather than through appropriated (Hatch) funds.

These changes will not mean a greater emphasis on basic as compared to applied research or a shift toward research at the expense of teaching and extension. The AFRI program contains opportunities for extension-only, teaching-only and integrated programs across all three mission areas. In fact, in recent years proposals submitted to some of the integrated programs through NRI (now AFRI) have experienced a greater success rate as compared to some of the more basic programs.

We must continue to focus on grantsmanship and ways to increase our competitiveness as a mechanism to fund and drive our programs. Please take advantage of grantsmanship workshops; two workshops are being held in November; we will continue to provide travel assistance to these workshops. Recently, we have made arrangements with two grant writing companies to provide editing services for grant proposals. Two grant pre-award coordinators have been hired and a third position will be added soon to assist faculty with proposal preparation and submission.

UTIA has excellent faculty and staff driving very strong programs that are well suited to address the needs of our clientele. We will remain highly competitive as we move forward with our mission-oriented programs.

Research Profile: The AgResearch and Education Center in Spring Hill

We interviewed **Center Director** Dennis Onks about what the **AgResearch and Education Center at Spring Hill** offers Institute scientists.

Describe your location and general facilities.

The Research and Education Center at Spring Hill is located in the heart of Maury County. Its location reflects the Central Basin topography of Middle Tennessee. The Center consists of 1,272 acres. Approximately 1,150 acres are suitable for crops, pasture, and hay. Dairy and beef production, agronomy, horticulture, and engineering research have been ongoing since the late '50s. With research agendas changing within UT AgResearch, our primary focus will be developing systems of livestock production with the improved varieties of forages that are emerging. Our basic research will increase as more emphasis will be placed on disease control of mastitis and associated pathogens of dairy and beef cattle.

What does your Center offer faculty in terms of land and infrastructure resources?

Our staff is outstanding. Each member has the ambition to conduct research that will help producers with their problems and ultimately provide high quality food and fiber for all people. The staff have upgraded their skills in order to offer assistance for any research that faculty would like to execute on this Center. We have upgraded our facilities to provide equipment to assist in data collection from the applied to many basic procedures. Our research equipment is adequate for most agronomic endeavors as well as any horticultural work. We have excellent cattle handling facilities that can be used for the most demanding of research protocols. We maintain 90 beef cows and 200 lactating dairy cows. Our replacement cattle bring our cattle total to 500 animals. Land topography is excellent for small plots and expansive enough for the need of production related requests. Being centrally located in the state offers easy access for educational programs and with a conference capacity of 100 participants for indoor events, it allows more flexibility for faculty needs.

Tell us about current research and extension projects underway at your Center:

Our major research effort deals with vaccine development for dairy mastitis. This program needs many lactating dairy animals to provide statistical differences and requires purchased animals many times to complete the protocols. Our replacement beef and dairy animals are being used for a warm and cool season grazing system using 24 three-acre paddocks. This project could offer alternatives for our beef producers to lower input costs. Our grape and blueberry research offers small landowners the ability to produce for personal consumption and the opportunity to create a cash crop as well. We are assisting the biofuels initiative with switchgrass amendment trials to determine the value of animal waste in the production of cellulose. We are evaluating many forage and corn varieties that can be used for silage to provide higher quality and yields for our dairy and beef industries. Housing the performance tested bull station since 1972; this producer service continues to provide valuable genetic information for producers that has helped increase the yield and quality of Tennessee beef.

What are some success stories that have come from work at your Center?

The development of a grass-fed beef system was important for producers because it shows that quality beef can be produced on forage with appropriate supplements. It offers the option to keep animals on the farm to capture the value–added product of consumer–accepted beef. Proving that preventive treatment for mastitis can be accomplished in dairy heifers is a practice that yields more milk per lactation and increases profits for dairymen. Small fruit yields have been increased with the use of mulch around the plants. Plants start growing earlier and water retention is increased, which yields more fruit. Using soybean oil to spray dormant peach trees will prolong the dormant period for the trees and lessens the damage from early spring freezing temperatures.



Jack Parker

Forage sampling at the AgResearch and Education Center in Spring Hill.

National Award to Extension's Program Development and Evaluation Specialist

In the course of a year, how many people do we see? How many lives do we touch?

Those are numbers Joseph Donaldson wants to know—and he trains others to help find that valuable information.

Donaldson is being recognized by his peers nationally for his work with UT Extension in training and evaluation efforts. He is receiving the Excellence in Evaluation Training award from the American Evaluation Association for 2009. This is an organization of professional evaluators around the country who work at other universities and in private industry.

"I appreciate the confidence of my colleagues who nominated me," Donaldson says. "This award represents the professionalism and outstanding scholarship of UT Extension."

Donaldson is a specialist in program development and evaluation for UT Extension. Over the past four years, he has provided 523 hours of face-to-face instruction to more than 4,000 Extension professional contacts in 160 classes. He also works with computer software **SUPER–the System for University Planning, Evaluation, and Reporting—and trains Extension personnel in how to use this technology to more accurately measure the organization's outreach efforts**. –*Chuck Denney*



Rich Maxey

Joseph Donaldson

Institute Economics Researchers Honored with National Award for World Vision for Agriculture

What will our world look like in 2040? Will we zip around in George Jetson spaceships? Could the Internet be encoded into our DNA? What about a vacation to another planet?

Maybe that's bold thinking, but it's fun to dream about the future. Now two University of Tennessee Institute of Agriculture researchers are being recognized for their vision of our world in 30 years. Specifically they want to find ways to produce our food supply without expending too much energy and the heavy use of fossil fuels.

Daniel De La Torre Ugarte and **Chad Hellwinckel** of the **Department of Agricultural Economics** recently were awarded by the Farm Foundation in its **30-Year Challenge Policy competition.** The two UTIA researchers won first place in the Global Energy Security category for their paper titled "Peak Oil and the Necessity of Transitioning to Regenerative Agriculture."

"I'm so glad we were selected," Hellwinckel says. "The Farm Foundation is an organization that really addresses how we will meet the challenges of the future."

"The Farm Foundation is one of the premier agricultural institutes in the United States," says De La Torre Ugarte. "They highlight ideas and validate the importance of those ideas."

The researchers believe the earth's supply of oil will diminish in coming decades, and agriculture may be too dependent on this increasingly scarce and expensive resource. They urge a transition to "regenerative" agriculture to avoid being locked into a system that depletes our soils. "Regenerative" ag refers to a process that mimics the dynamics found in nature which allow systems to maintain their own fertility, build soil, resist pests and diseases, and be highly productive. –*Patricia McDaniels*

Grants & Contracts

You can view a PDF containing the third quarter 2009 grants and contracts at http://agriculture.tennessee.edu/publications/tt/.

HOLIDAY EXPRESS
at the UT Gardens

Bring the Entire Family to UT Gardens for Holiday Express. This annual event dazzles people of all ages with a 4,000-square-foot canopy covering garden-scale model trains that run through miniature scenes and life of East Tennessee from the 1930s-era to present day, all decorated for the holiday season.

The trains are shown under a tent near the entrance of the UT Gardens in Knoxville. Event dates and hours:

- November 24, sneak preview for UT faculty and staff, Friends of the UT Gardens and sponsors.
- November 25-28, 12-8 p.m.
- November 29, 12-6 p.m.
- December 4-January 3, Fridays and Saturdays, 12-8 p.m. and Sundays 12-6 p.m.
- Christmas Day, 2-6 p.m.
- December 28-29, 12-8 p.m.

UT Horse Judging Team Competes at the 2009 All-American Quarter Horse Congress

The UT Horse Judging Team recently competed at the 2009 All-American Quarter Horse Congress in Columbus, Ohio, marking the beginning of the fall Horse Judging season. The All-American Quarter Horse Congress is the world's largest single-breed horse show receiving more than 17,000 horse show entries and attracting more than 650,000 people over its three-week schedule. It's also the site for one of the most prestigious Youth and Intercollegiate Horse Judging contests in the nation.

From a slate of 21 teams, the Volunteers claimed a tenth place finish overall (Eleventh Team-Halter, Eleventh Team-Performance, tenth Team-Reasons). Allison Erkman (Sr. in Animal Science) placed as seventh individual in halter and was one point away from the top 10 in reasons from 92 collegiate contestants. Team members were rewarded with official "Top-10" Congress jackets and walked away with resounding enthusiasm for their next competition.

The next stop for the team will be the AQHA World Show in Oklahoma City, OK on November 18, 2009 where they will compete for the coveted title of World Champions. –*Russell Kriewald*



UT equestrians, from left to right, with Coach and Equine Lecturer Russell Kriewald include Mia Boyd, Victoria Tilson, Allison Erkman, Jennifer Hartman, and Caitlin Narramore.

New Veterinary Service available for UT employees and students

The UT College of Veterinary Medicine has opened a Small Animal Community Practice for UT employees, retirees, and students. Unlike the college's Veterinary Teaching Hospital specialty services, **the Community Practice doesn't require a veterinary referral, and can serve as a client's regular veterinary clinic.**

Fourth-year students, under the guidance of faculty members **Amy Holford** and **Beth Johnson**, will provide primary care for dogs and cats. Primary care includes wellness examinations, vaccinations, spay/neuter, flea/tick/heartworm preventions, and dental services. Veterinary students receive excellent training in treating complicated medical cases referred into the hospital, but the Community Practice is designed to provide them hands-on experience with similar cases they are likely to encounter in general practice. Patients that require more advanced medical care will be referred to specialists either at the Veterinary Teaching Hospital or within the veterinary community.

UT employees and students receive a 10 percent discount on office visits to the Community Practice. Clients must have a valid UT I.D., and payment is expected at the time of the visit. The Community Practice is located in the new wing of the John and Ann Tickle Small Animal Hospital located at 2407 River Drive next to the UT Gardens. To make an appointment, call 974-VETS. Visit www.vet.utk.edu/community-practice for more information.



Greg Hirshoren

Beth Johnson conducts a physical on a CVM patient.



Sue Hamilton

Susan Hamilton Named Director of UT Gardens

Susan Hamilton, associate professor in the Department of Plant Sciences, has accepted Vice President Joe DiPietro's appointment to be the director of the UT Gardens effective November 1, 2009. Hamilton presently serves as Interim Director of the Gardens. DiPietro says he is looking forward to continuing to work with her as Director and is very confident she will continue to advance the UT Gardens, its programs and outreach efforts. Please join in congratulating Hamilton on her new appointment.

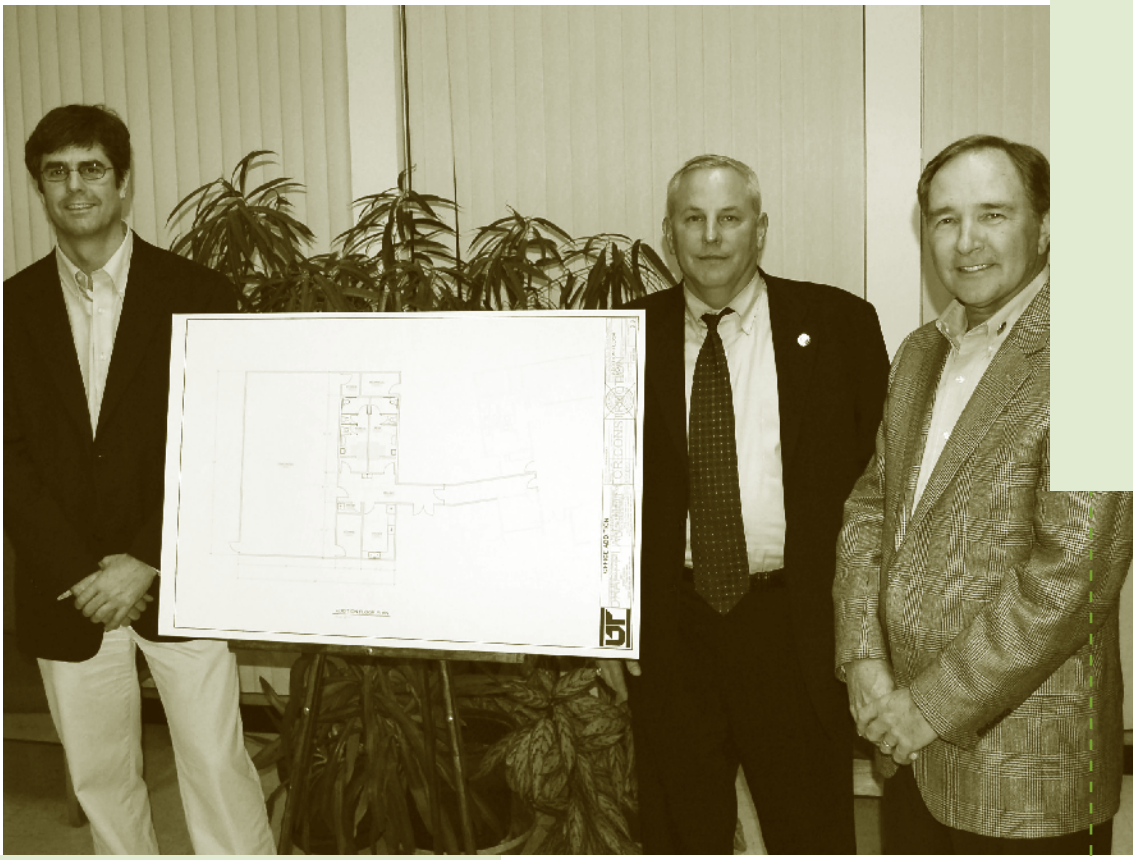
Generosity of Oak Ridge Corporate Partners Honored by UT Institute of Agriculture Arboretum

The University of Tennessee Arboretum in Oak Ridge, a part of AgResearch within the UT Institute of Agriculture, is a living museum, an outdoor laboratory and classroom, and a nature sanctuary—one of Oak Ridge's most beloved treasurers.

To ensure the future of the Arboretum, the Institute of Agriculture has launched a multi-year, $3 million fundraising campaign. One million dollars of capital improvements have been identified, including an Auditorium renovation and annex. The Institute of Agriculture and the UT Arboretum Society, one of the oldest volunteer support organizations affiliated with the University of Tennessee, announced at a reception on November 2 that $950,000 has been raised in the campaign so far. This represents a major milestone in the overall campaign. UT-Battelle, B&W Technical Services LLC, and Oak Ridge Associated Universities were honored at the event for their contributions of $450,000 for the addition to the existing facility which will provide additional classroom space, technology and options for educational programming during inclement weather and after sundown. It will also provide an ideal space for youth and environmental programs in the Oak Ridge area.

"The UT Institute of Agriculture is grateful for the wonderful generosity of donors who have helped us come closer to the reality of having a new auditorium at the Arboretum," UT Vice President for Agriculture Joe DiPietro said."The new facility will allow us to have even greater contact with the Oak Ridge community by having a top notch facility to conduct educational programs, community events and extension activities for youth and adults." Prior successes of the campaign have included a lead gift of $500,000 from the Rogers Group in Oak Ridge. Additionally, a new parking lot, improvements to and construction of new walking trails, new trail benches and signs, bridges, and new plant collections were made possible by a $114,000 grant from the Tennessee Department of Environment and Conservation through its Recreational Trail Program. Campaign officials hope to conclude fundraising for the new auditorium by the end of the year.

If you are interested in learning more about the Arboretum Endowment Fund and how you can help, please call Rhodes Logan or Tom Looney at 865-974-1928. The Forest Resources and Education Center is located at 301 S. Illinois Avenue in Oak Ridge, three miles southeast of downtown Oak Ridge on Highway 62. The UT Arboretum and the Forest Resources and Education Center are outdoor demonstration laboratories operated by UT AgResearch, a division of the University of Tennessee Institute of Agriculture. In addition to its agricultural research programs, the UT Institute of Agriculture also provides instruction, research and public service through the UT College of Agricultural Sciences and Natural Resources, the UT College of Veterinary Medicine, and UT Extension offices in every county in the state. The UT Arboretum Society is a 44-year-old, non-profit organization dedicated to furthering the objectives and programs of the University of Tennessee Forest Resources Research and Education Center's 250-acre Arboretum Project in Oak Ridge.



Below: *Thom Mason, Director of the Oak Ridge National Laboratory, representing UT-Battelle; Andy Page, President of Oak Ridge Associated Universities; and Darrel P. Kohlhorst, President and General Manager, B&W Technical Services LLC Y-12 National Security Complex show off plans for the Arboretum auditorium rennovations.*

Bayer Crop Science Supports UT AgResearch

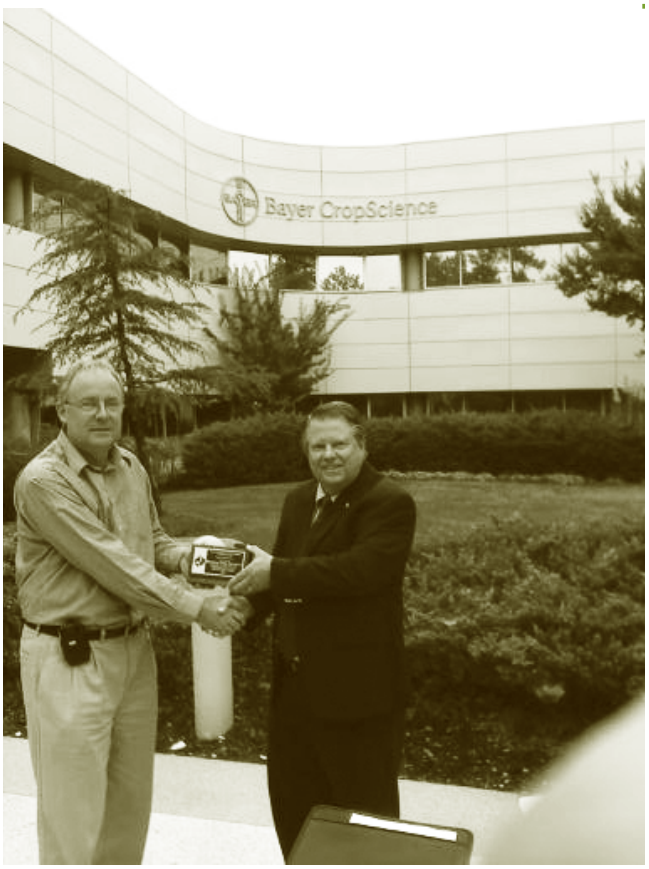
Bayer Crop Science became a new member of the **University of Tennessee Benefactors Society** this year **by providing more than $250,000 to UT AgResearch since 2005**. Members of the Benefactors Society are companies and individuals who have given gifts totaling more than $100,000 to UT.

"We are fortunate to have Bayer as a supporter who is a global leader in crop protection, bio-science and environmental science," Bill Brown, dean of UT AgResearch, said. "Their support allows us to conduct research that positively impacts the agriculture and natural resources industries in Tennessee."

Bayer's support has benefitted areas such as turfgrass research conducted by **John Sorochan**, associate professor in Plant Sciences, and Liberty Link soybean research, conducted by **Larry Steckel**, associate professor in Plant Sciences. Research conducted by **Brandon Horvath**, **Tom Mueller, Chris Main, Melvin Newman, Scott Stewart,** and others have also received support.

Headquartered in Monheim, Germany, Bayer Crop Science is a global provider of crop solutions, products, and services and is one of the leading companies in the key segments of the worldwide agrochemical markets. Its U.S. office is located in Research Triangle Park, North Carolina.

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Bill Brown**, dean of UT AgResearch, presents **Nick Hamon**, vice president of Product Development and Global Sustainable Development for Bayer Environmental Science, with **a Benefactor's Society plaque recognizing Bayer's support of more than $250,000 since 2005.

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Send comments and suggestions to Margot Emery, memery@tennessee.edu
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