

UT INSTITUTE OF Agriculture

News for Employees, Students & Friends

February 2008

Roland Mote
reflects on his
career here

\$8.1 million
in 4th quarter
grants and
contracts
see inside

FROM THE VICE PRESIDENT: EXPANDING OUR INTERNATIONAL TIES

Institute researchers, Extension agents, and specialists can take pride in their success in promoting the virtues of no-till agriculture. For more than 40 years, we have reached out to educate farmers on how to prevent erosion in the highly fertile soils of West Tennessee. As a testament to our efforts, today nearly 90 percent of the state's row crops are now farmed using no-till or conservation tillage technology.



Joe DiPietro

Our well-known success in no-till ag is generating a new opportunity to take our land-grant mission to an international level. Through a memorandum of understanding signed between UT, our cooperating Extension partner Tennessee State University, and the National University of Lesotho, UT and TSU researchers and Extension professionals will be able to assist the students and farmers in the African nation of Lesotho, where erosion and low crop yields are persistent, critical problems.

Neal Eash and Forbes Walker of Biosystems Engineering and Soil Science helped make the Lesotho partnership a reality. They were facilitated by Theotis Robinson Jr, UT vice president of Equity and Diversity, with help from Robert Orr of UTIA

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Biofuels research on show – Biosystems Engineering professor Al Womac, right, discusses biofuels research with National Science Foundation delegates, as they tour Institute labs.

NATIONAL SCIENCE FOUNDATION DELEGATES TOUR UTIA LABORATORIES

Some 40 participants from the National Science Foundation (NSF) Engineering Research and Innovation Conference received an update on the UT Biofuels Initiative and toured the UT Biosystems Engineering labs in early January.

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THREE INITIATIVES FUNDED TO DRIVE NEW TECHNOLOGIES

The UT Research Foundation has selected 10 UT researchers or research teams to receive technology development grants for 2008. Three are tied to research programs underway at the Institute of Agriculture.

Grant funds will allow researchers to further develop or "mature" their technologies so that they are better positioned for licensing and commercialization. Researchers were invited to propose further work on inventions and discoveries that had been previously disclosed to UT and assigned to the research foundation or to bring new disclosures with a development plan.

Forty-two proposals were received from the four campuses and three institutes that make up UT. The following were selected from the Institute for funding:

Continued, page 2

third Thursday

NEW TECHNOLOGY INITIATIVES, from page 1

- **Shigetoshi Eda, Cathy Scott and Steve Oliver**, Forestry, Wildlife and Fisheries and Animal Sciences, for work on a diagnostic test for bacterial infections;
- **Juan Jurat-Fuentes**, Entomology and Plant Pathology, for work on a new bio-pesticide; and
- **Steve Oliver**, Animal Sciences, for work on a vaccine to prevent mastitis in dairy cows.

"We were pleased with the submissions and were happy to join with the Research Foundation to support research that accelerates the transformation of new knowledge into valuable products and services," said **Tom Klindt**, interim dean of the **Tennessee Agricultural Experiment Station**, one of the contributors to the expanded funding pool that supported the number of grants awarded.

"These joint efforts are at the heart of UT's land-grant mission," Klindt said.

VETERINARY COLLEGE OFFERS SUPPORT FOR GRIEVING PET OWNERS

Coping with the death of a pet can often times be a stressful experience. **Veterinary Social Work**, a program of the **UT College of Veterinary Medicine**, is offering the **Pet Loss Support Group** to help those experiencing the grief process.

The group meetings are free and are designed for anyone whose pet has died or is terminally ill. They are held the first and third Tuesday of every month from 6:30 p.m.-8:00 p.m. on the UT agricultural campus at the Forest Products Center, 2506 Jacob Drive. If you are interested, please contact the Veterinary Social Work office at (865) 755-8839 or visit www.vet.utk.edu/socialwork for more information.

REFLECTIONS ON 41 YEARS WITH THE EXPERIMENT STATION

by **C. Roland Mote**, Associate Dean
Tennessee Agricultural Experiment Station



C. Roland Mote

On the last day of this month, I plan to leave my full-time position with the Tennessee Agricultural Experiment Station (TAES) and enter the retirement phase of my life. Each previous phase has been rewarding and, in the most part, quite enjoyable. I expect the retirement phase to have its own rewards and joys, and I am looking forward to it with much anticipation. However, as I leave my position in the Experiment Station, I will be giving up the excitement of daily contact with a great group of bright, energetic, and engaged folks confident in their ability to contribute to the enhancement of life for all of us. This aspect of the transition into retirement is not enticing.

The life of a scientist working in agricultural research has changed much in the 41 years since I was first exposed to research as a graduate student working on a project funded by TAES. Part of the change has occurred as a result of a shift in the public's attitude about funding research. As a graduate student in Agricultural Engineering, I recall needing a pump for my project and contacting a pump-company representative to inquire about availability of a particular model. Upon learning the nature of the research in which the pump was to be used, the company wanted to donate the pump. I thought getting a free pump would be a great deal, but my major professor was reluctant to accept it without checking with the dean. The dean's response was that we would buy the pump to avoid any perception of bias in our findings because of accepting support from a company that stood to benefit from positive results. The public's decision to reduce direct funding of research and require that we self generate research support has sure deprived us of that luxury. But, we have adapted and are now comfortable with and successful at securing competitive funds from both public and private entities sufficient to support a very aggressive and focused research program.

My tenure has also been long enough to witness a shift in emphasis from application or "translational" research to discovery research. TAES has adapted to this shift in emphasis remarkably well. We now have highly capable scientists working on the frontier of the advance of understanding into the realm of ignorance and successfully unraveling the fundamental mysteries of nature. However, I now sense, as has repeatedly happened throughout history, that the pendulum has reached the extent of its swing and has started back in the other direction. More and more we are seeing in RFPs the requirement of a translational component to projects proposed for funding. Such a shift is highly appropriate, for it's only in application that people will benefit from basic advances in the understanding of nature. This change bodes well for an exciting future for TAES. We have both the tradition of and infrastructure for cutting edge application research. We are fortunate to have had predecessors with the wisdom to establish and maintain our system of 10 Research and Education Centers.

I expect to continue to see great things from the fine folks in the Tennessee Agricultural Experiment Station. I'll be watching from the rocking chair on my back porch.

Institute of Agriculture Grants and Contracts

October–December 2007

Thanks to the resourcefulness and competitiveness of our faculty, the Institute received awards totaling \$8,138,987 in grants, contracts, and cooperative agreements from external agencies for the fourth quarter of 2007. At a time when most states are operating with constrained budgets, our ability to attract dollars for research and Extension from outside sources has become especially crucial. To the principal and co-principal investigators listed below, congratulations. To everyone, we appreciate your support and efforts in seeking external funding.

Oct

PI; Co-PI	Department	Award	Agency
John Bartee	Montgomery County	27,300	Army Ft. Campbell
Keith Belli	Forestry, Wildlife, and Fisheries	77,950	US Geological Survey
David Buehler	Forestry, Wildlife, and Fisheries	25,750	USDA Forest Service
		10,000	US Fish and Wildlife Agency
Joseph Clark	Forestry, Wildlife, and Fisheries	16,790	Tennessee Wildlife Resources Agency
Paul Denton	Plant Sciences	120,162	Philip Morris
Shigetoshi Eda	Forestry, Wildlife, and Fisheries	23,690	Biovet Inc
Robert Ellis	Greeneville Research Education Center	13,390	Philip Morris
Kathleen Franzreb	Forestry, Wildlife, and Fisheries	12,000	USDA Forest Service
Robert Hayes	West Tennessee Research and Education Center	11,880	USDA ARS
Silke Hecht; India Lane, Fredric Morandi	Small Animal Clinical Sciences	8,005	Morris Animal Foundation
Darrell Hensley	Entomology & Plant Pathology	14,133	University of Florida
Martha Keel	Family and Consumer Sciences	20,486	Centers for Disease Control
Frank Kirkpatrick	Animal Science	250,000	Tennessee Department of Education
Nicole Labbe	Forest Products Center	4,000	USDA Forest Service
Dayton Lambert	Agricultural Economics	17,541	USDA ERS
James Larson	Agricultural Economics	39,013	University of Nebraska
Amy LeBlanc	Small Animal Clinical Sciences	22,340	National Institutes of Health
Brian Leib	Biosystems Eng. & Soil Science	13,110	Philip Morris
Jun Lin	Animal Science	166,300	National Institutes of Health
Thomas Martin-Jimenez; Al Legendre, Sherry Cox, Amy LeBlanc, Jeffrey Phillips	Comparative Medicine	40,868	Morris Animal Foundation
Dan McEmore	Agricultural Economics	70,000	Philip Morris
Darryl Millis	Small Animal Clinical Sciences	43,068	Sanuwave
Pat Parkman	Entomology & Plant Pathology	40,000	USDA Forest Service
		13,300	Tennessee Wildlife Resources Agency
Maria Prado; Dilip Patel, Raul Almeida, Stephen Oliver	Animal Science	375,000	USDA CSREES
Mark Radosevich	Biosystems Eng. & Soil Science	1,351,370	USDA CSREES
Darryll Ray	Agricultural Economics	25,000	National Farmers Union
Samuel Rogers	Plant Sciences	4,900	Tanasi Lagoon Townhouse Assoc.
		13,806	Town of Farragut
Carl Sams	Plant Sciences	75,856	Floratine Products Group, Inc
Barry Sims	Highland Rim Research and Education Center	13,390	Philip Morris
George Smith	Agricultural Economics	60,000.00	Texas A&M University
John SoroChan	Plant Sciences	*25,000	National Turfgrass Federation, Inc
David Vandergriff	Eastern Region – Knox County	4,875	Tennessee Valley Authority

*Combines multiple grants

Grants and Contracts *October–December 2007*

Oct.

PI; Co-PI	Department	Award	Agency
Forbes Walker	Biosystems Eng. & Soil Science	241,500	Tennessee Department of Agriculture
Hwa-Chain Wang	Pathobiology	72,500	National Institutes of Health
John Wilkerson; William Hart	Biosystems Eng. & Soil Science	14,380	Delta & Pine Land Company
		30,000	Cotton, Inc
Philip Ye	Biosystems Eng. & Soil Science	13,150	Bush Brothers
Timothy Young	Forest Products Center	86,500	Quintek Measurement Systems

Nov.

PI; Co-PI	Department	Award	Agency
Feng Chen	Plant Sciences	30,000	USDA AARS
Joseph Clark	Forestry, Wildlife and Fisheries	12,000	Louisiana Department of Wildlife and Fisheries
Wayne Clatterbuck	Forestry, Wildlife and Fisheries	85,592	USDA CSREES
Mathew Devereaux	Family and Consumer Sciences	525,000	Tennessee Department of Education
Mohammad Hajimorad	Entomology & Plant Pathology	46,573	Iowa State University
Darrell Hensley	Entomology & Plant Pathology	39,000	University of Florida
Stephen Kania	Comparative Medicine	40,000	Sci-Tec, Inc
Elizabeth Long	Entomology & Plant Pathology	13,000	University of Florida
Stephanie McCain; Claudia Kirk, Susan Lauten, Edward Ramsay	Small Animal Clinical Sciences	5,985	American Association of Zoo Vets
Stephen Oliver	Animal Science	30,000	Fort Dodge Animal Health
Pat Parkman; Carl Jones	Entomology & Plant Pathology	87,000	National Park Service
Timothy Rials; Thomas Klindt	Sun Grant Center	1,612,684	US Department of Transportation
Adam Taylor	Forestry, Wildlife and Fisheries	33,158	LanXess Corporation
Larry Wilson	Forestry, Wildlife and Fisheries	2,000	US Fish and Wildlife Agency
Steven Yen	Agriculture Economics	5,000	US Food and Drug Administration

County billing accounts for 2007

Richard Buntin	Western Region	52,611	Crockett County
Troy Dugger	Western Region	43,188	Hickman County
David Glover	Central Region	42,196	Smith County
Joseph Hall	Eastern Region	91,329	Anderson County
Paul Hart	Central Region	114,027	Robertson County
Stephen Lester	Central Region	68,566	White County
J. W. McGuire	Central Region	118,666	Wilson County
Eugene Medley	Central Region	49,713	Overton County
Cllint Parker	Central Region	128,677	Sumner County
Margaret Pile	Eastern Region	50,569	Fentress County
Jonathan Rhea	Eastern Region	66,844	Jefferson County
Dewayne Trail	Central Region	147,775	Rutherford County
Steve Walker	Central Region	41,489	Macon County
Cynthia Zietz	Central Region	28,272	Jackson County

Dec

PI; Co-PI	Department	Award	Agency
Paul Ayers	Biosystems Eng. & Soil Sciences	58,600	US Army CERL
Keith Belli	Forestry, Wildlife and Fisheries	6,000	UT Battelle
Wayne Clatterbuck	Forestry, Wildlife and Fisheries	24,150	National Council for Air and Stream Improvement
		34,000	Tennessee Department of Agriculture
Burton English	Agriculture Economics	91,400	Tennessee Department of Envmt and Conservation
James Giocomo	Forestry, Wildlife and Fisheries	15,581	American Bird Conservancy
Craig Harper	Forestry, Wildlife and Fisheries	11,960	DeltAg
Juan Jurat-Fuentes	Entomology & Plant Pathology	10,000	USDA ARS
		24,300	Mycogenomix
Amy LeBlanc	Small Animal Clinical Services	18,009	EMD Lexigen Research Center Corp.
Galina Melnichenko	Biosystems Eng. & Soil Sciences	2,000	UT Battelle
Darryl Millis	Small Animal Clinical Services	2,000	Novartis Animal Health
Betty Neilson	Henderson County	12,000	LeBonheur Community Outreach
Stephen Oliver	Animal Science	146,110	Pfizer Animal Health
		50,000	Fort Dodge Animal Health
Jeffrey Phillips; James Blackford	Small Animal Clinical Services	5,419	Merial Limited
Timothy Rials; Timothy Young	Sun Grant Center, FWF	100,000	US Forest Service
Lawrence Steckel	Plant Sciences	10,000	Cotton Foundation
Charles Stewart	Plant Sciences	24,975	Mycogenomix
Adam Taylor	Forestry, Wildlife and Fisheries	33,158	Arch Wood Protection
		6,723	Viance, LLC
Angela Thompson	Plant Sciences	58,500	University of Florida
Donald Tyler; Burton English	Biosystems Eng. & Soil Sciences, Agriculture Economics, West TN Research & Educational Ctr	28,482	UT Battelle
		111,403	USDA ARS
Hans Westermeyer; Diane Hendrix, Dan Ward	Small Animal Clinical Services	5,000	ACVO Vision For Animal Foundation
Steven Yen	Agriculture Economics	130,000	USDA ERS

VP: INTERNATIONAL, *from page 1*

International Programs and Don Tyler of Plant Sciences. Thanks to everyone for their efforts.

We are living in a truly global world and economy. Opportunities for student, faculty, and Extension exchanges and ties with partner universities in Lesotho, Thailand, Jamaica, and other parts of the world contribute to the success of our endeavors and prepare our graduates to thrive in their careers and lives.

And be sure to save the date of July 24 when we will celebrate the 25th Milan No-Till Field Day at the Research and Education Center in Milan.

All the best,

Joe

- Feb 16, **New Arboretum Trail Ribbon Cutting, Guided Hike**, Forestry Resources Research and Education Center, Oak Ridge, 10 a.m.
- Feb 19, **Pet Loss Support Group, Forest Products Center**, 2506 Jacob Drive, UTIA, Knoxville, 6:30 p.m.
- Feb. 21, **CVM Pharmacy Day**, Knoxville
- Feb. 23, **UT Veterinary Goat Program**, Knoxville
- Feb. 23, **State LifeSmarts Contest**, Lebanon
- Feb. 25, **Lecture: "Will my plants recover from the 2007 freeze and drought?"** Oak Ridge Room at Roane State Community College, Oak Ridge, 7 p.m.
- Feb. 27, **UT Day on the Hill**, Nashville
- Feb. 28–March 1, **Master Gardener Winter School/Agent Training**, Lebanon
- March 7, **Deadline for CASNR Student Ambassador Applications**, Knoxville
- March 18, **Ag Day on the Hill**, Nashville
- March 31–April 2, **2008 Southern Association of Agricultural Experiment Station Directors meeting**, Knoxville

WHAT'S NEWS

The USDA Cooperative State Research, Education, and Extension Service video news magazine, *Partners*, has devoted its latest episode to biofuels. **Burt English of Agricultural Economics** is featured in a segment. You can visit http://www.csrees.usda.gov/newsroom/partners/fueling_america.html and scroll to the bottom of the page to watch his segment. It's also available on YouTube, along with another video featuring **Dean Caula Beyl and CASNR students** discussing interest in the **Biosucceed** academic program for **biofuels students**. Search UT switchgrass to find that video.

4-H Instructor Brian Stewart received the 2007 **Middle Tennessee Environmental Educator of the Year** award from the **Tennessee Environmental Education Association**. Stewart is the forest ecology instructor for the environmental education program at the William P. Ridley 4-H Center in Columbia. He discovered a love for all things creepy, crawly, slithery, and slimy at an early age. He rarely hears his real name at the 4-H center. Over the years, the students have given him many nicknames such as the "Crazy Critter Guy," "Creature Teacher" or "Bug Dude." He has been with the center since 1999 and has created many educational programs of excellence, working with more than 15,000 youth and adults.

The **Tennessee Association of Extension 4-H Workers**, TAE4-HW, finished second in the southern region with book collections for the Ronald McDonald House in Atlanta at the national meeting of 4-H workers. The group collected 103 books, surpassing the goal of 100. Overall, the southern region's goal of 500 books was far exceeded with over 1,200 books donated. Tennessee was well represented with distinguished winners at the conference. Congratulations to the following TAE4-HW members:

Meritorious Service Award – **Mitch Beaty**; Achievement in Service Award – **Nikki Akins, Janet Newton, Grant Palmer**; Distinguished Service Award – **Michael Barry, Tim Cross, Staci Foy, Wayne Key**; Air Force Recruiting Salute Award – **Doyle Meadows**; 25 years of service – **Janet Cluck, Larry Moorehead, Camille Jessee, Ann Sorter, Charlie Goan**; and national communication winners **Nancy Rucker**, radio program, and **Melissa Henry**, feature story.

Tennessee has three representatives on the **NAE4HA Board**: **Donna Bradley**, southern region senior director, **Nancy Rucker**, vice president of Marketing and Outreach, and **Sierra Ham**, southern region contact for Member Services Committee.

The Pre K class at **Dogwood Elementary** in Knoxville has fallen in love with their new friend, **Bea**. Bea is a coon dog who works for **the HABIT program**. HABIT uses gentle, well trained animals to visit and befriend people in school, nursing homes, shut ins, and other places. Bea's unconditional love and acceptance make her the perfect friend to listen to a story, tell a secret to, or just hug and pet and learn about animals. Bea has even taken part in a tea party! **Susan Lauton** of the **College of Veterinary Medicine** is Bea's companion. Students say Bea is the hit of the classroom. Learn more at www.vet.utk.edu/habit.

Henry Fribourg, UT professor emeritus of crop ecology, has been awarded the **Distinguished Grasslander Award** from the **American Forage and Grassland Council**. He received the honor for having served that segment of agriculture with distinction. After his retirement in 2001, Fribourg co-edited the *Tall Fescue Online Monograph* and its current revision under preparation, *Tall Fescue for the Twenty-First Century*.

Chuck Denney and **Doug Edlund** of **Marketing and Communications**

recently completed a national video project for America Saves Week, which runs from February 24th through March 2nd. The video will be shown on the America Saves Web site, www.Americasaves.org, to highlight the success of **Tennessee Saves**, a coalition of educational, corporate, and nonprofit organizations headed by **UT Extension**. Through its partnership with America Saves, Tennessee Saves encourages Tennesseans to save money, reduce debt, and build wealth. Agents can use the new video to explain the Saves program to potential sponsors and partners.

More than 180 potential switchgrass growers attended production interest meetings held January 14-18 in Blount, Loudon, McMinn and Monroe counties, far exceeding expectations for turnout. The meetings were sponsored by UT Extension and addressed the specific incentives, contract terms and requirements for participating in the \$8 million switchgrass farmer incentive program. Information on the switchgrass farmer incentive program can be found on the **Office of Bioenergy Programs** Web site at www.UTbioenergy.org.

Civic leaders, educators, students and community citizens will meet February 19 in Clarksville to **discuss ways for Tennessee to develop its greatest resource: youth**. Each year, the **Southern Growth Policies Board** engages communities throughout the South in discussions on issues related to economic development. This year the discussions will focus on ways to develop and strengthen the talents, vision and passion of youth. Two-hour community forums will be held across Tennessee in partnership with the **UT Extension**, UT Institute for Public Service, and state, regional and local partners. For more information, contact **Michael Wilcox** at (865) 974-3344 or mwilcox2@utk.edu.

SOME ADMINISTRATIVE CHANGES TO REPORT

At the end of this month, **Roland Mote**, associate dean of the **Tennessee Agricultural Experiment Station**, will retire. His departure brings to a close a career that began 41 years ago as a graduate student in agricultural engineering.

"His dedication and leadership will be greatly missed. He has become a vital part of the Experiment Station's progress over the past years," said Interim Dean **Tom Klindt**, in a message to faculty and staff. **John Wilkerson**, professor of **Biosystems Engineering and Soil Science**, will serve as interim assistant dean beginning March 3.

In the **Department of Agricultural Economics**, **Dan McLemore** is stepping down as head and returning to a faculty position within the unit, after 10-and-a-half years of dedicated leadership. Professor **Delton Gerloff** is serving as interim head while a search is conducted.

In the **Department of Plant Sciences**, **Neil Rhodes** will be leaving his position at the end of March as head to take on new responsibilities. Rhodes, who has provided leadership as department head since 2002, will now focus on management of weeds and brush in pasture and forage crops, biofuel crops, and aquatics. This 100 percent **Extension** appointment includes responsibilities for conducting educational programs and applied research. Professor **Bob Augé** will serve as acting head while a search is organized and conducted.

"We appreciate the hard work, dedication, and leadership that Drs. McLemore and Rhodes have provided and wish them well in their new endeavors," says **Caula Beyl**, dean of the **College of Agricultural Sciences and Natural Resources**. "And we are grateful to Drs. Gerloff and Augé for their willingness to serve as acting heads."

EXTENSION PROGRAM AIDS THE HUNGRY

We live in the richest country on the planet, but we still have people who are hungry.

But volunteers in one Tennessee community believe no one's cupboard should be bare.

UT Extension and Second Harvest Food Bank of Nashville teamed together recently to provide meals and nutritional information to needy people in Dickson County. More than 10,000 pounds of food were delivered to 200 families.



A 4-H'er sacks onions to aid the hungry.

"This is a real example of Dickson County at its best," says Extension Director **Janet Cluck**.

In particular, this effort focused on helping the elderly. Each person got a box of food, and nutritional information from **TNCEP**—or the **Tennessee Nutrition and Consumer Education Program**. "One of our purposes is to help people make good choices about preparing food, choosing foods that are nutritionally adequate and preparing them in healthy ways," Cluck says.

4-H'ers from Youth Leadership Dickson County pitched in, too. They helped to unload trucks, stacked food into piles, and then carried groceries to the parking lot for recipients. This project also included home deliveries of food to 30 families in Dickson.

You can view a video story on this topic at <http://www.agriculture.utk.edu/news/VideoReleases/>.

—Chuck Denney

EXTENSION LAUNCHES ONLINE PESTICIDE RECERTIFICATION PROGRAM

This month, **UT Extension** expects to begin online delivery of its **Private Applicator Recertification Program**. Tennessee has 10,938 certified private applicators of restricted-use pesticides who must be recertified every three years.

"We have definitely progressed over the years," says **Gene Burgess**, professor and Extension coordinator in the Department of Entomology and Plant Pathology.

"We have come from flip charts to slides to videos to PowerPoints to the new online program, which has a variety of teaching functions and can be accessed and shown by computers or burned to

CDs or saved on to thumb drives and transported to different locations. This is an exciting time for new educational delivery systems."

This advance, which offers agents and users a far more flexible program, is made possible thanks to the work of Burgess and Information Technology Specialist **Richard Karel**. **The deadline for recertification is October 21, 2008.**

In March the two plan to release online training for private applicator initial certification. Both programs are fee-based. Following that, Burgess and Karel will work to take the **commercial applicator program** online.

NSF TOUR UT LABS, from page 1

"The recently passed 2008 Energy Bill calls for the production of 36 billion gallons of renewable fuel by the year 2022, and 21 billion of that will come from cellulosic, or non-food plant materials," said **Al Womac**, professor of Biosystems Engineering at UT and coordinator of the event. Womac went on to explain that the UT Biofuels Initiative would contribute significant research findings toward meeting this mandate.

The goal of the Initiative is to construct and operate a 5 million gallon-per-year cellulosic ethanol plant in East Tennessee. The purpose of the biorefinery will be to research and demonstrate the technologies involved in converting switchgrass, wood chips, and other agricultural feedstocks into ethanol fuel.

NSF delegates were able to study exhibits of current feedstock analysis being conducted by the Biosystems Engineering department. A main concentration of the department's research is to study the overall size and state of a feedstock when it arrives at the ethanol plant for processing.

"The yield of ethanol can vary based on the state of the feedstock when it

ARTHRITIC ARCHIE

Archie has one of the worst cases of arthritis Darryl Millis, a UT College of Veterinary Medicine orthopedic surgeon, has ever seen in cats. A study showed that up to 90 percent of older cats have arthritis in their spine and joints. While owners may think that slowing down is part of their cat's aging processes, pain could be keeping their pets from being as mobile as they once were.



Currently there are no approved drugs to manage arthritis in cats. **The college is participating in a placebo-controlled clinical study for approval of a new medication** to manage osteoarthritis in cats. Archie was the first cat enrolled. For more information, contact **April Durant** or **Jason Headrick** at (865) 974-8387.

comes into the facility," said **Philip Ye**, assistant professor with the department. "We are experimenting with various feedstock sizes and shapes, with the goal of finding the optimum size for conversion and transportation," which is key to the process.

"We want to make sure that we aren't spending more energy on the front end, planting, harvesting, and transporting the feedstock, than we will get out of it on the back end from the resulting ethanol," Womac

said. "Finding a favorable net energy balance will be a key determining factor in the success of the process."

As it stands now, Womac predicts that cellulosic ethanol can have as much as a 500 percent net energy gain over traditional corn ethanol, which explains why a mandate for the technology was included in the new energy legislation.

– *Patterson Wilson*

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