Innovations in Learning

A FOCUS ON AGRICULTURE AND NATURAL RESOURCES PROGRAMS AT THE UNIVERSITY OF TENNESSEE INSTITUTE OF AGRICULTURE
As vice president, I’ve continued the tradition of delivering a State of the Institute address to our faculty and staff each fall. The talk is an opportunity to assess where we’ve been and where we’re headed.

We’ve had an exciting and productive year. I’m pleased to report that our new leadership team is now fully in place, with each member chosen for his or her unique ability to serve Tennessee’s needs, from agriculture and natural resources, to family and consumer sciences, 4-H, and veterinary medicine. You can meet the team on pages 18 and 19 of this issue.

Importantly, the Institute continues to enjoy a strong relationship at the UT system level. And, while we have had financial challenges, we’ve come up with some creative ways to continue to work within the resources we have to provide solutions to Tennessee citizens in all walks of life. We expect the budget climate to be even tighter in the new fiscal year, making support from our alumni and friends all the more critical.

In July, we announced an exciting new collaboration on the biorefinery front with DuPont Danisco Cellulosic Ethanol LLC. In October they joined us with Governor Phil Bredesen and a host of other dignitaries in breaking ground on the biorefinery facility in Vonore. As the Biofuels Initiative speeds ahead, we’re also seeing a return to the land and basics. We’re experiencing an improving image and recognition of the importance of agriculture and the vitality of careers in ag-related fields and in natural resources, family and consumer sciences, and veterinary medicine. The situation bodes well for the future of those fields and for the Institute and the value placed on what we do.

All the best,

Joe

Joseph A. DiPietro
UT Vice President for Agriculture
Switchgrass Studies – Researchers investigate solutions for storage and transportation efficiency

Getting Personal – CASNR emphasizes individual in preparing its students

Tell Us – We’re seeking your memories of campus and input on a survey

In Profile – Getting to know environmental sciences whiz Joanne Logan

From Laptops to Koi – CASNR faculty innovate in their areas of specialization

Prime Landings – Top-notch internships position students to compete for great jobs

First in Care – CVM innovates as it prepares vets for private practice, public service

Meet the Team – Get to know the new leaders of the Institute’s units

Thinking Ahead – Farmer secures the future of his estate and organic production

Green Markets – Across Tennessee UT Extension agents help launch farmers’ markets

What’s in a Name? – For Experiment Station, fewer than 14 syllables and a memorable brand

Dairy’s future in Tennessee – UT AgResearch and Extension work to secure the industry

Taking Healthy Steps – Program offers preschoolers lessons in food and physical activity

Ten Years of Value-Added – Finding new opportunities on the farm

Alumni Dream Jobs – Read about others, tell us about yours

BeaUTiful – UT Gardens celebrates its new Friendship Plaza
LESOTHO ADOPTS UT NO-TILL PRACTICES

No-till cropping systems have been such a success in Tennessee that sometimes growers take them for granted. But the idea and technologies behind “spare the plow and save the soil” are a big success story to farmers in other reaches of the globe.

A key agricultural scientist from the African nation of Lesotho visited UT’s AgResearch plots in Jackson and Milan to study how no-till, cover crops, and rotation crops were being used. During a weeklong visit coordinated by Drs. Neal Eash and Forbes Walker of Biosystems Engineering and Soil Science, Dr. Makoala Marake also met with Vice President Joe DiPietro, deans, and department heads at the Institute and their counterparts at Tennessee State University.

“The initial soil conditions that existed in western Tennessee before no-till are about where we are now in Lesotho,” Marake said. “So the problems you have overcome in the past 30 years and the ongoing research to find the technologies are very relevant to us. They’ll probably save us many years of effort on our own.”

A RED LETTER DAY FOR ALTERNATIVE ENERGY

With the symbolic use of a no-till drill, ground was broken Oct. 14 in Vonore for the Tennessee Biofuel Initiative’s innovative pilot-scale biorefinery and state-of-the-art research and develop-
The switchgrass is already being grown. The biorefinery will soon be under construction. But the best way to get this product from the field to the factory is still unknown.

As the University of Tennessee prepares to construct a pilot-scale biorefinery and state-of-the-art facility for cellulosic ethanol development, researchers are seeking the answers to this question. At the AgResearch and Education Center at Milan, UT Professors Drs. Burton English and Don Tyler are conducting a study to measure efficiency in switchgrass storage and transportation. It’s one of the first studies of its kind in the nation.

“I felt it was time to look at it,” says English. “One of the tremendous unknowns in the whole biofuels area is in regards to the storage quantity and quality of biomass that will be required of the facility.”

The 500-day study compares the pros and cons of storing switchgrass in the large round bales that are commonly seen in Tennessee versus large square bales. The study also looks at the benefits of covering the bales and storing them on pallets or gravel as opposed to directly on the ground. According to preliminary observations the round bales are much better at holding up to weather damage and are also less expensive to produce. However, square bales do have a distinct advantage when it comes to transportation.

“If you want to transport switchgrass, you can get more weight on a truck with square bales than with round,” says English. “In addition, you don’t have the problem of having the bales overlapping the sides of the truck.”

Studies similar to this one have already been conducted involving hay bales. But, as Dr. Tyler explains, a good hay bale and a good switchgrass bale have different standards.

“In a hay crop we want protein. We want all of the nutrient values left. You don’t want it to mold,” says Tyler. “But we’re not trying to harvest switchgrass when it has good feed quality. All we’re trying to do is maintain the cellulose and the hemicellulose, which are the last things that are going to be left.”

In other words, weather damage and rot may or may not have an effect on successfully converting switchgrass to ethanol. So every 100 days, researchers are sending samples of these round and square bales to the Idaho National Laboratory. There scientists can determine the amount of ethanol in each weathered layer of the switchgrass bales. Tyler says once researchers know exactly what they are working with, they will know what the biorefinery needs and can then determine the most economical way for producers to store and transport their product—round or square.

“We can tell somebody reasonably well what it will cost to produce it. This study will find out what its going to cost to properly store it and have it where it will be transportable,” says Tyler. “What’s the minimum you can do that’s going to satisfy a biorefinery for relative efficiency?”

English and Tyler both say this study will help bridge the unknown gap between production and conversion and perhaps solve the problem of getting switchgrass grown at point A to be successfully converted to ethanol at point B. —Ginger Trice
Taking a personal approach

CASNR GETS PERSONAL IN PREPARING ITS STUDENTS

Chances are if you are a graduate of UT’s College of Agricultural Sciences and Natural Resources, or College of Ag as it once was known, you remember its warm and friendly atmosphere. Faculty knew you by name and took a sincere interest in your progress. It was easy to spot friends as you walked across the agricultural campus.

Generations may have passed since you attended UT, but today those same values hold true. CASNR prides itself on the one-on-one student advisement that occurs between faculty and students in its programs. While other colleges may rely on large advising centers to guide students through their academic careers, in CASNR, each student is paired with a faculty member who serves both as advisor and mentor to the student—and often, ultimately, as a friend.

Most faculty members with teaching appointments in CASNR advise, and the low student-to-faculty ratio (20:1 in 2007-08) means each faculty member really gets to know each individual student, his or her aspirations, and personality. Each becomes virtually a member of the departmental “family” with all the benefits of such a relationship.

“Students are the heart of the university,” says Dean Caula Beyl, “and these strong advisor-student relationships help us to bring out the best in our students, guide them through their matriculation, and often help launch them in professional careers following graduation.”

COMPETITIVE FINANCIAL AID PACKAGES

CASNR students also receive highly individualized attention when it comes to financial aid. Entering freshmen, transfer, and current students are urged to submit scholarship applications. The college has many scholarship awards. Some may be designated for persons whose parents are involved in a particular type of agricultural enterprise or simply designated for someone in a county where the students live. Consideration is given to each student’s personal circumstances.

“CASNR has one of the largest scholarship programs within the University of Tennessee and maintains a wide range of awards for students from freshmen through graduate school,” says Jeff Gerkin, UT assistant dean and director of financial aid. “It’s one of the most comprehensive scholarship programs we have on campus.”

The exceptional scholarship program is made possible by gifts from alumni and friends. Dr. Mike Smith, professor of Animal Science and chair of CASNR’s scholarship committee, says the awards are deeply needed. “As a parent, I well understand the constraints families are under to afford college. Some of our students may have brothers or sisters who are also in college or hoping to attend. For

In CASNR’s new agricultural leadership major, Drs. Carrie Stephens, center, and Bryan Patterson see exciting opportunities for students to learn and develop practical skills that can immediately be applied to today’s job market. UT is among only a handful of land grant universities to offer such a program.
parents, it can be very tough to cover the expenses. That’s where our financial aid can help.”

In the 2008-09 academic year, $812,875 was awarded to a total of 430 students, with a per student average of $1,890—aid that Smith says has often made a difference in whether a student has been able to attend, or remain in, school.

**THE LATEST IN TEACHING THEORIES AND TECHNOLOGIES**

For the past two years, CASNR has brought national scholars of teaching and learning styles to campus for workshops open to the college and university community. The programs emphasize ways of reaching and guiding 21st century students.

Comfortable with technology and multitasking, today’s students thrive in dynamic learning environments. To suit their learning style, college faculty are using the latest in instructional technologies in their teaching, from podcasting to student-centered Web site construction.

Andy Pulte, lecturer in the Department of Plant Sciences, finds podcasts and blogs useful in extending his classroom teaching. “In the course ‘Basic Landscape Plants,’ I only have time to go into the chief plants in the classroom. For example I teach them about the standard native redbud tree, but there are some great redbud cultivars that I want them to be aware of. My teaching assistants do podcasts and blogs about these cultivars and those enable students to experience them very efficiently and effectively.”

Dr. Matthew Gray of the Department of Forestry, Wildlife, and Fisheries, uses podcasting in all courses he teaches, as well as in his department’s graduate seminar. He led the college into podcasting in 2005 and surveyed students on the value they found in it. “One hundred percent of them said they were in favor of it. They can access these files on their mp3 players, by computer, and on cell phones, so the modules are accessible to them. I found that they were using the podcasts as a tool for studying and that on average their use of the podcasts was boosting their grades by one to two percent.”

“My ultimate hope is that we can continue to build our podcasting resources to the extent that they augment our continuing education and distance learning programs. I see them as a way of extending our teaching and educational abilities beyond the borders of UT and Tennessee,” Gray says.

“This just has been a fantastic year for us in recruitment,” says Dr. Richard Heitmann of Animal Science, at left. As advising coordinator, he met with each of the department’s 100 new students, mentoring them on course selection and other issues, and then assigned them to a faculty advisor. Enrollment in the department, CASNR’s largest, topped 380 this fall.
Acting on student interest and industry demands, CASNR added a new degree program this spring and new concentrations in bioenergy and biotechnology. Preparing tomorrow’s leaders today is the goal of the new agriculture leadership concentration, a component of the Agriculture and Natural Resource Leadership, Education, and Communications degree offered by CASNR. The degree prepares students for careers in fields all experiencing heavy demand.

“The leadership education and skills acquired through this new concentration will aid the students in finding opportunities in Fortune 500 companies, as well as civic organizations where employers are seeking team leaders and managers who are ready to take on the challenge,” says Dr. Bryan Patterson. The demand for food, agriculture, and natural resources graduates will exceed available supply by four to 10 percent in the next decade, according to national assessments. Leadership skills will be an essential component of what can make these graduates stand out.

In the Department of Plant Sciences, the new bioenergy concentration is intended for students interested in pursuing careers in the rapidly expanding biofuels and bioenergy fields. Graduates will have the background and internship experience to enter directly into the bioenergy workforce or continue on for advanced degrees for careers as scholars and scientists.

The biotechnology concentration is designed for students wishing to pursue advanced degrees in plant molecular biology and biotechnology and/or careers in the plant biotechnology industry.

“Both these areas—bioenergy and biotechnology—are moving so swiftly and encompass a growing number of subjects that we felt they merited their own concentrations,” says interim department head, Dr. Bob Augé. “We’re excited about what they’ll enable our students to do.”

“It’s important for our alumni and friends to understand that the college is looking to the future and attuning its academic programs to the needs we see for the future,” says Dr. Mary Albrecht, associate dean for academic affairs. “The students who are coming in are so different than those we’ve had before, and so are the markets and industries that await them. We have to do things differently to reach this generation of students. They’re wired so differently. And we are actively engaged in doing things differently to reach them.”

“CASNR is adapting and changing to meet the needs of our students and the demands of the agriculture and natural resources sectors in the years to come,” says Dean Caula Beyl. “Our enrollment is growing, and we’re seeing heightened interest by recruiters. It’s an exciting time for us and for our students.”

You can learn more about the college at its Web site, www.casnr.utk.edu, or by calling (865) 974-7303. —Margot Emery with Doug Edlund
In profile: Joanne Logan

Known for her mastery of technology, courses on the climate, and friendly, approachable manner, Associate Professor Joanne Logan has been teaching environmental sciences classes in the college since 1987. She took a few minutes to answer some of our most pressing questions.

Casnr voted you outstanding advisor. What do students most value you for?

I think they feel comfortable coming to me with issues and for advice. Kids feel I’m kind of a go-to person on advising. I’ve been doing it for 15 years—I learned from a master, Dr. Gary Lessman,—so I know what things are going to fly. I think I’ve been able to get 20 to 30 students out a semester earlier than expected just by helping them optimize their class schedules.

What’s your favorite subject to teach?

Global warming. I feel it’s just such a huge issue now. I teach it in debate format, and we have quite a diversity of opinion. Students learn the subject matter and also how to have a logical, reasoned, and objective debate.

GIS, GPS, cell phone, or iPod?

GIS (Global information system)—I love making maps on computers using GIS. I also enjoy my Garmin GPS 60CSx which tells me to within 10 feet where I am! I like to geocache, especially finding virtual geocaches and earth caches. I’d give up my cell phone before I’d part with my iPod. I’m totally addicted to it. I listen to Cranky Geeks with John Dvorak and TWiT (This Week in Technology) with Leo Laporte, and then I download TV shows like Lost, the Office, and stuff like that.

Where do you go for weather information?

The National Climatic Data Center (www.ncdc.noaa.gov) for my research and teaching. At home, it’s weather.com and the Weather Channel.

You’re known for your ties to the regional youth science fair. What keeps you involved?

Some 350 students participate. It’s hectic setting up. The day of the event, with all the kids there dressed in suits and dresses looking like little scientists in front of their posters—it just gives me tingles to see these budding scientists defend their research to Ph.D.s and do a really good job of it.

Who is your weather/climatic hero or heroine and why?

Dr. James Hansen of the NASA Goddard Institute. He has provided a credible voice for the majority of scientists concerned about global warming. I am also a big fan of Dr. Stephen Schneider of Stanford. He has studied climate change impacts on humans and societies long before it became fashionable. I got to meet him in person this past summer.

“In profile” is a new feature that will appear in each issue of the magazine, and we need your input. For the spring issue, we will visit with Michael Davidson, a food microbiologist who thinks food preservatives are good. He directs a growing academic program tailored to students interested in the quality and safety of food. E-mail a question you would like us to pose to Professor Davidson at agalumni@tennessee.edu.
Professor revamps ag finance to match industry practices

Dr. John Riley saw a need when he began teaching a senior-level agricultural finance course. Students were using pencils and paper to solve problems and consulting tables in the back of their textbooks. “That was the way I did it when I took finance 40 years ago, and I knew it wasn’t the way that the students would do it after they graduate. They’d use computers, instead.”

So in 2005, the professor of Agricultural Economics sought and received a Faculty First Grant through UT’s Innovative Technology Center to restructure all learning in the class to make it computer-based and even more problem-oriented. As Riley worked to change the format of the course, the College of Agricultural Sciences and Natural Resources used funds through UT’s technology fee program to purchase 40 laptop computers that students now use each class period.

“We’ve gone completely paperless, and I’ve shifted from a textbook to a manual that is more tailored to what we’re doing. The students are very comfortable with the class. They like the structure and materials, and they realize that the approach we’re taking fits the way they’ll solve problems once they graduate,” Riley says.

Lessons in the class build on one another. “We talk about an investment. We talk about financing that investment and if a loan is obtained, how the repayment will be made. We talk about the different types of depreciation and about the different costs of capital and how its different sources are weighted. So all of a sudden we might be buying a tractor, financing it by a certain type loan, depreciating it by a specified method, figuring our weighted cost of capital, determining what return we need to make the investment work, and ultimately finding the internal rate of return to see whether it really will pay off. Everything comes together at the end of the course into one unified problem.”

Riley says he’s touched by the number of alumni who say how much they’ve benefitted from the course and how useful they’ve found it in their careers.

—Margot Emery
Swimming with the flow

ONLINE LEARNING HOOKS KOI ENTHUSIASTS

Seven years ago, Professor Richard Strange launched a Web-based course on fish physiology. He saw advantages to UT students in a course that was totally online. The seniors and graduate students for whom the class was intended could study and learn at their own pace. Virtual laboratories and animated fish organs would bring key concepts to life.

What Dr. Strange didn’t anticipate was that his Web-based teaching would attract a far broader following than just UT students.

“When you stick something up on the Web, you never know who it will reach,” muses Forestry, Wildlife, and Fisheries department head, Dr. Keith Belli. Dr. Strange concurs. “You just don’t know where it’s going to take you.”

His first clue that the course was reaching beyond campus came when he received an e-mail from retired engineer Spike Cover of Mission Viejo, California. Cover serves on various educational committees for the Associated Koi Clubs of America, an umbrella organization of approximately 105 clubs made up of enthusiasts of ornamental carp. The fish, known as koi, are kept as pond and show fish here and around the globe and can be worth thousands of dollars.

Cover thought Strange’s online course would make an excellent teaching tool for koi hobbyists. As he talked with Strange, he realized the fisheries biologist could offer much value to the association’s Koi Health Advisers. These volunteer specialists assist hobbyists and work with veterinarians when problems of koi health or water quality occur.

“Koi science is an oxymoron according to one scientist, and there’s some truth to that,” Cover says. “What Richard has contributed to the association is specialized scientific understanding. He’s taught classes for us and gotten excellent reviews. He’s just done a first-class job.”

“We’ve put together a charity and raised $150,000 to do things to better allow us to understand, avoid, and get on the right side of koi herpes virus (KHV),” Cover says. “Richard has been instrumental in helping us to develop a koi dealer best health practices certification program and an online training course that’s now in beta testing for vets who wish to be involved in the certification.” The program is aimed at containing the spread of KHV, which is a threat to both common carp and the koi industry.

Last summer, Strange’s growing expertise in koi led to an invitation to give three talks on water quality in the new pet fish section of the American Veterinary Medicine Association.

It’s an unusual twist for a professor who’s spent the past 30 years teaching fisheries science that targets aquaculture and managing wild fish for anglers and wildlife resource agencies.

“When Spike first contacted me about the teaching materials, I didn’t know much about koi,” Strange says. “It’s a pretty arcane subject with all these Japanese words and customs that go back to the 18th century.

“But as I’ve interacted with hobbyists, I’ve realized that there are a lot of people in the practice that use traditions that haven’t had the light of objective science shined on them. Some work fine. Others, though, are not employed with other captive fish—rainbow trout, catfish, tilapia. That, to me, is the knowledge that I can bring to those guys. I can say, ‘You’re doing all those things, and I can understand why. But this and this? I bet if you did it this other way, it’d be just as good and easier and cheaper.’”

Do these interactions mean Strange has national standing in the koi community? “I’m starting to be known for it. As koi authorities go, there are probably 20 veterinarians recognized, and I’m one of four or five Ph.Ds.

“It’s a pretty small pond,” he says with a grin. —Margot Emery
Internships and externships

PREPARING STUDENTS TO COMPETE FOR PRIME JOBS

From working in an Alaskan veterinary clinic to seining kettles of catfish in West Tennessee, internships in the Institute’s two colleges are as varied as students’ interests. The diverse experiences share common goals, though: to equip students with real-life training in their chosen fields, help them build networks of professional contacts that will be instrumental in their careers and, most importantly, to give UT students an edge in competing for top jobs after graduation.

Here’s a sampling of recent internships undertaken by our students. The photos alone convinced us that we’d like to return to our student days and take off on internships ourselves.

Lauren Bernstein, Animal Science/Pre-Veterinary Medicine, interned with the Washington, D.C.-based American Public Health Association, which at over 130 years old is the oldest and largest organization of public health professionals in the world. Bernstein hopes to focus her career on public health issues to help the world’s impoverished areas. She participated in seminars on public health issues related to HIV/AIDS, agriculture, and water sanitation and met with legislators on Capitol Hill and personnel with key world health agencies. A highlight was the chance to talk with senior health officials from several countries in Africa, as well as representatives from the U.S. Public Health Service Corps, and the Epidemic Intelligence Service.

Cassie Whaley, Wildlife and Fisheries Management, contributed to the conservation of loggerhead sea turtles during her summer internship at Blackbeard Island National Wildlife Refuge by working with professionals engaged in threatened and endangered sea turtle conservation along the Georgia coast. She tagged and monitored nesting sea turtles then protected their nests and hatchlings. She learned about the integrated role of state and federal agencies in the conservation efforts.

Josey Harris, Wildlife and Fisheries Management, gained fisheries management experience with the Tennessee Wildlife Resources Agency in West Tennessee. Here she seines a West Tennessee lake to ensure that bass and bluegill populations are in balance.

Brick Veirs, Agricultural Economics and Business, won one of two prestigious scholarships to attend the Memphis-based International Cotton Institute. Before his studies, such cotton terminology as middling, net landed weights, CNF Bangkok, and ICA rules might have seemed like a foreign language, but no more. Veirs plans to attend graduate school, unless the cotton industry comes calling.

Angeline Scotten, Wildlife and Fisheries Management, worked with three different agencies during her summer internship. At Royal Blue Wildlife Management Area, she studied territory and nesting behavior of the golden-winged warbler. Next she assisted Jay Carr with nuisance black bear control in the Smokies. She spent the final portion of her internship at the Busch Wildlife Sanctuary in Jupiter, Florida. There she presented wildlife education programs with the sanctuary’s permanent residents (permanently injured native Florida wildlife). “I presented the sanctuary’s educational goals, gave the life history of each animal, and also incorporated the management strategies of my education from UT into the programs.”

Brandon Simcox, Wildlife and Fisheries Management, split his internship between working with state-listed threatened species in the high desert environment of the San Rafael River and work in the Uinta Mountains in the Wasatch National Forest in Utah sampling for brook trout. Here he weighs a brookie caught in a gill net and measures a tiger trout from the same lake.
Jay Carr, Wildlife and Fisheries Management, worked his summer internship with the National Park Service in the Great Smoky Mountains. He concentrated his efforts on bear management. In the photo he is working up a nuisance bear captured at a picnic area. The work up includes marking the animal with identification tags and tattoos and measuring the animal, all while the bear is under anesthesia. Then the bear was returned to the wilderness.

Stuart Morris, Turfgrass Science and Management, engaged in a six-month internship with the Boston Red Sox during their championship 2007 season. From maintaining manicured base lines to mowing the intricate patterns of Fenway Park, Morris did it all.

Tyler Cote, Veterinary Medicine, did his externship at the Big Lake-Susitna Veterinary Hospital in Wasilla, Alaska. The clinic focuses on small animal medicine, surgery and dentistry, providing vital services to its community. Cote learned about the clinic’s work with sled dogs. “One of their best clients brings in their Iditarod sled dog team which has won the entire race four times! While I was there, I assisted in all surgeries including soft tissue and orthopedic and was able to act as primary surgeon on several elective procedures. I participated in case discussions and was challenged every day to think about cases and make clinical decisions. I came in for all emergencies and was able to work one-on-one with the on-call clinician.”

Amanda Hannah, Public Horticulture and Landscape Design, put her knowledge of both those fields to work as an intern at the U.S. premier public gardens, Longwood Gardens in Kennett Square, Pa. There she helped to manage, mentor, and supervise a group of high school interns from Philadelphia. “While the horticultural knowledge I gained at Longwood is vast, I believe that teaching those students was the most valuable part of my experience because it taught me a lot about communicating with others and how to be a team leader.”

Sean Elverd, Turfgrass Science and Management, (right) interned with the Pine Valley Golf Club in Camden County, in southern New Jersey. Pine Valley is regularly ranked number one in Golf Digest’s list of America’s 100 greatest courses. “My duties included pesticide applications to all turfgrass surfaces through sprayhawking greens, tees and approaches; boom spraying fairways and rough; fertilizer application to greens, tees, and rough; hand watering all turfgrass playing surfaces; green, tee and fairway aerification; greens topdressing; mowing of greens, tees, approaches, fairways and rough; greens topdressing; nursery green establishment; bunker face and surround reconditioning on fairway and greenside bunkers; and sand cart path construction and repair.” In short, he did about everything!

Paula Schaffer, Veterinary Medicine, didn’t make it back with any photos of herself on her externship at the San Diego Zoo, “but I have plenty of beautiful histology images,” such as the one here of a Glass frog’s liver, viewed under polarized light. “I love pathology and I wanted to use my externship time to get more experience with necropsy (autopsy) techniques and with histopathology. At the zoo I was able to perform necropsies on a giraffe, a wart hog, many gazelles, a chameleon, many species of birds, and many other unique species. I also got to practice interpreting histopathology slides—one of my favorite pathology past times. I saw some really neat lesions and truly learned a lot.”
Veterinarians and veterinary biomedical scientists require a high degree of education and training. Their careers demand an understanding, and integration, of broad areas of science and medicine, as well as an intuitive ability to work with patients who cannot speak. As graduates, they will work to improve animal and human health in fields that are critical to public health, biological science, and agriculture.

To prepare its students to lead in their challenging fields, UT’s College of Veterinary Medicine seeks out and integrates the latest instructional technologies and learning practices into its teaching. Students learn in smart classrooms and use virtual microscopes. Faculty members are guided by cutting-edge teaching theories and participate in newly revised peer review processes. Assessment, a pioneering veterinary social work program, and team-centered learning also stand out as assets.

These innovations shape and influence the 60-plus new veterinarians the college graduates each year. They also drive the college’s reputation as a leading veterinary medicine program—one with unique strengths in teaching.

Students lean in close to examine a dog heart with multiple congenital defects. Pathologist Dr. Linden Craig varies her teaching approach to break up the routine of learning. “Students can sit through class on autopilot. Doing something different at least every 10 minutes really helps keep their attention.”
TECHNOLOGY-RICH LEARNING

Dr. Michael Sims, professor and associate head of Comparative Medicine, calls the College of Veterinary Medicine’s instructional technology resources “a banquet” that faculty can choose from. “They can choose what works best for them, and not everyone opts for the same thing. There are plenty of choices.”

In some courses, faculty members provide students with clickers to use to wirelessly answer questions in class. Student responses are instantly displayed on the overhead screen, so they can see how their thinking tallies with others and with the correct answer. Clinical associate professor Dr. Linden Craig finds that it’s a good way to break up the rote of learning, while driving home key points. Students say they appreciate the dynamic.

Lecturers can use smart podiums that allow them to annotate PowerPoint slides in color as they teach. Picture a football analyst on TV. In the same way, faculty members can circle key concepts or point to areas of interest on digitized slides as their visuals are projected on the classroom’s overhead screen.

These visuals, and increasingly the captured audio that accompany them, are cached on the college’s intranet, VetNet. There they are a resource to students taking the course, as well as to entering and advanced students who may seek to preview or review key points of a subject.

Digitized images of microscopic materials on glass slides have revolutionized learning in courses focused on histology, histopathology, and others. While previous generations of students had to use microscopes and share slide trays, now virtual microscopes make professors’ slides available to all on a computer screen, whether in the classroom, stored on VetNet, or in the college’s new 48-seat computer lab. The lab allows faculty members to present images on a widescreen overhead and, simultaneously, on the lab’s individual monitors where students can zoom in and manipulate images at will.

“Our digitized slides enhance learning and they ease up demand on the college’s laboratories,” says Michael Cunningham, head of instructional support.

Technology also factors into how student performance is measured. Faculty can use exam scanning for all or part of their tests. With this approach, students answer multiple-choice questions on special paper that can be read by a computer. Their responses are scanned the same day, allowing faculty members to grade examinations instantaneously. Students benefit by knowing their test results the same day or often within days, with grades posted to a password-protected area of VetNet. They also benefit because exam scanning allows faculty to conveniently analyze how well their test questions are performing. Knowing an item has elicited a poor response enables them to return to the classroom to address a problem area or to set aside questions that failed to perform as desired. The rapid grading technique also allows faculty to give greater attention to open-ended questions that may also appear on exams. The technology is a real asset for faculty who are dealing with grading 70 or more students at a time.
Learning and teaching methods never stand still. Six years ago the college launched an educational enhancement program to take a global look at its educational process, curriculum, and learning environment. “And we’ve added bits and pieces and evolved over time,” says its director, Dr. India Lane.

The program seeks to foster quality teaching and learning in a positive educational environment. Educational enhancement prepares and delivers six Application Based Learning Exercise Cases, known as ABLE. The cases expose students to simulated situations, clients, and hands-on experiences. Each challenges students to apply their classroom and clinical learning to situations that mimic real life.

The educational enhancement program also incorporated communication and people skills training into ABLEs and clinical rotations for second- and third-year students.

Other impacts of the program include creation of a professionalism week for faculty, students, and staff; promotion and delivery of numerous seminars and workshops on teaching and learning; and input into promotion and tenure guidelines related to teaching.

“The educational enhancement program is a nice story of the good that can come out of strategic planning,” Lane says.

“We saw all the things that we wanted to do in teaching and realized that they linked together: promotion and tenure for faculty members, delivering good curriculum and teaching, and changes and processes we need to follow to provide outcomes assessment for our stakeholders.

“We realized that if we can help faculty do these things well, then we will have all the groundwork and data that we need to do highly effective outcomes assessments of our students, knowing that we’re giving them very good instruction, and getting very good feedback to ensure that we’re assessing them appropriately. Everything links together.”

This summer, as part of the educational enhancement initiative, Lane and Sims implemented a master teacher program for the college. The vision of the program is to enable effective completion of the college’s instructional strategic goals, professional advancement of faculty members, and enhanced professional and graduate student training. Assessment is a key part of this new program.

For accreditation purposes, faculty members in the college recently established clinical competencies for their fourth-year students. While faculty know intuitively the skills and abilities they expect students to be able to perform, writing out competencies will help build a database of objectives in the future that can guide teaching and learning in the college.

“Basically we’re saying to the students, here are the things you should know and be able to do, and here is what we think is important,” Sims says. Having the criteria in place will allow faculty to systematically determine how a student is doing on each of nine clinical competencies.

Across the next few years, Sims hopes to build upon the competencies to assemble a database of instructional objectives for all courses taught within the college.

“What we’re hoping is that people are so comfortable with writing objectives—that they find that it turns out to be a positive thing for their lectures—that they’ll see the value of writing objectives and submitting them to a database where they can then be used to guide instruction and learning for both faculty and students alike. It also ensures all competencies are covered at the proper depth and reduces overlap between courses.
In addition to this effort, the college’s Assessment Committee conducts on-line course and instructor evaluations each semester, along with surveys of entering and graduating students, alumni and employees. This provides a more complete picture of the educational program and helps to identify significant trends over time, according to Dr. Nancy Howell, director of assessment.

VETERINARY SOCIAL WORK

No discussion of innovation in the college is complete without mentioning the Veterinary Social Work program, a unique partnership between the CVM and UTK’s College of Social Work. The program provides support and relevant education for students, faculty, staff, and clients of the college.

“We’re here to help individuals prepare for the social and psychological interactions they will face as caregivers in their field,” says founding director Dr. Elizabeth Strand.

The program runs the gamut from a focus on the human-animal bond to grief recovery and mindfulness-based stress reduction. CVM’s partnership with the College of Social Work is among the first such collaboration in the nation, dating back to 2002.

IN FULL MEASURE

Alumni and graduates have much to be proud of in the veterinary educational program as it continues to move swiftly ahead. Whether relying on new technologies to teach or integrating new approaches in education, the college continues to innovate as it prepares its students for 21st century careers. To be sure, challenges exist. Among them, procuring and maintaining expensive equipment, dealing with finite space, upgrading the Large Animal Hospital, and stretching the college’s resources to accommodate the maximum number of students possible. The college is working with donors and friends and state support to meet and overcome these obstacles. The teaching hospital’s new John and Ann Tickle Small Animal Teaching Hospital stands as an example of what can be accomplished through collaboration and partnership. With new Dean Jim Thompson aboard, exciting times lie ahead. –Margot Emery

Using an operating microscope designed for teaching, Dr. Dan Ward (left) observes Dr. Nancy McClean, third year ophthalmology resident, during cataract surgery on a dog. A camera nestled within the scope transmits detailed images to a 32” flat panel screen so students can observe surgical techniques.
SOLUTIONS FOR TENNESSEE

Establishing a leadership team uniquely suited to provide solutions to Tennessee’s needs has been a top goal for Vice President of Agriculture Joe DiPietro. When he arrived at the Institute, three deanships were filled by interim heads, Under DiPietro’s leadership and with full faculty, staff and stakeholder input, national searches were conducted to fill the positions. Earlier this year a fourth search was conducted for the College of Veterinary Medicine, after its dean, Dr. Michael Blackwell, announced plans to retire. Now all four searches are complete and the Institute has in place exceptional leadership to serve and advance its research, learning, and outreach programs. Here we introduce you to the team:

AN INSIDER’S KNOWLEDGE OF THE STATE

The new dean of UT Extension is familiar to many in agricultural circles across the state.

As an agricultural economist with UT since 1994, Dr. Tim Cross is known for developing and delivering quality educational programs about livestock management, animal waste management, forage production, and sustainable agriculture. As an assistant, then associate dean with UT Extension, he oversaw linkages between UT, industry groups, and other state and federal programs, particularly those concerning the Tennessee Department of Agriculture and Tennessee Ag Enhancement Program.

Now, as dean, he coordinates all of UT Extension—not just agriculture, natural resources, and resource development, but also 4-H and family and consumer sciences. “The opportunity to interact across all those program areas is what I look forward to most. The impacts of our people and programs are important, our partners are invaluable, and it’s exciting work to be involved in,” Cross says.

He believes UT Extension is well positioned to help youth, families, farmers, and communities in meeting future challenges and issues. “Developing renewable sources of energy, increasing the life skills of youth, and reducing obesity in the state’s population are just a few examples of the ways we can make a difference in the lives of Tennesseans.

“The support of the University of Tennessee, the Institute of Agriculture, and the many partners of UT Extension combined with outstanding specialists, agents, and staff suggests a very bright future for our educational programming.”

BLOOM WHERE YOU’RE PLANTED

As he guides extension programming for UT, he and his family are deeply involved in it at home. Cross’ wife, Denise, and the couple’s four children raise and show Hampshire and Shropshire sheep. He teases that he married into extension. Denise is the daughter of an Oregon extension poultry specialist and grew up in 4-H, just as their children are today. —Margot Emery

As a “military brat” whose family moved 18 times in 16 years, Dr. Caula Beyl particularly appreciates life’s anchors: Her mother, who re-made curtains for every new house and painted the walls green; and her father, who faithfully planted his favorite cockscomb and marigolds in every yard.

The bright blooms inspired Beyl’s early interest in horticulture. Like those irrepressible plants, she thrives in different settings and multiple pursuits—as a researcher, teacher, and administrator.

“If you take everything a step at a time, with confidence, you can accomplish much more than you think,” Beyl says. And her career stands as an example of that. As a graduate student and scientist she embraced the relatively new research area of mechanical stress physiology of plants.

Her deep-rooted understanding of that field influences her actions today as dean of the College of Agricultural Sciences and Natural Resources. “Even under challenging environments, plants find a way not just to survive but to thrive.

“While college study is demanding, our students have the resources they need to grow and succeed. We offer great scholarships, good career choices, and outstanding internships. I’m most proud of the one-on-one student advisement. This attention ensures students get the most out of their education, and it also exists as a safety net, alerting a faculty member early if a student is experiencing a problem.”

Beyl’s warm and friendly manner has won her friends on campus. Her background in assessment, accreditation, and use of institutional data is already having impacts on the college. And Beyl herself has put down anchors. Her backyard reflects her love of horticulture and an appreciation for trees, shrubs, and flowers that thrive in Tennessee. —Kathy Mayer
AN EYE FOR AGRICULTURE AND MORE

When it comes to Tennessee agriculture, Dr. Bill Brown’s background is based in family farming. The Institute of Agriculture’s new Dean for Research hails from extended family farms that raised cotton, soybeans, corn, beef cattle, poultry, and swine.

As he pursued studies in animal agriculture, including a master’s from UT, he chose his universities based on top caliber faculty. That same principle led him to his new position as dean for Research and director of UT AgResearch.

“I had high expectations of what I’d find at the University of Tennessee, and the situation is even better than I’d anticipated. Faculty in the Institute of Agriculture are conducting excellent quality research of high scientific value and have outstanding relationships with clientele groups including the Farm Bureau. Those strengths factor into how well we serve the agricultural, natural resource, and family and community needs in the state and act as a positive force for enhancing Tennessee’s economy.”

Brown’s background extends beyond farming and beef cattle production. Formerly as director of the Tropical and Subtropical Agriculture Program in the University of Florida’s Institute of Food and Agricultural Sciences, he oversaw programs aimed at the containment and control of invasive alien species—expertise that is well suited for both row-crop production and natural resource issues in Tennessee.

He views the land grant university as a powerful economic driver. “Agriculture is vital to the state of Tennessee. Our integrated teaching, research, and extension programs combined with our infrastructure across the state—our 10 Agricultural Research and Education Centers and UT Extension offices in every county—enable us to serve traditional production agriculture exceptionally well while, at the same time, to be very engaged with nontraditional clientele.

“Through Blooms Days and Summer Celebration, we’re bringing nontraditional clientele into our facilities where they learn more about the Institute of Agriculture and what it means for solving their issues—from bioenergy and urban plant nurseries, to nutrition and obesity.

“These are issues of importance to all citizens and to the state and nation. I’m excited about our research and what it means for the future.”

—Margot Emery

FOSTERING INSPIRATION AND ENCOURAGEMENT

Dr. Jim Thompson enjoys challenges. From tinkering with his own plumbing to rebuilding classic cars and unlocking the secrets of cancer, the new dean of the College of Veterinary Medicine faces life with gusto.

The veterinarian turned administrator spent his youth walking through the woods of rural Indiana with his dog and ranging the countryside with friends. His early experiences convinced him that he belonged with both people and animals. Although his family relocated to Pennsylvania, when he finished high school Thompson moved back to Indiana to attend Purdue University and follow his dream of becoming a veterinarian.

“I feel lucky to have been given the opportunity and privilege of becoming a veterinarian,” he affirms. “I am hoping to help veterinary medicine continue its strong historical relationships between people, animals, agriculture, and the environment. The UTCVM seems a good fit for that goal.”

Thompson graduated from Purdue with a B.S. in biology in 1976 and a school record for indoor pole vaulting—15’ 8.75”. He then headed to the University of Florida where he earned his D.V.M. and his Ph.D. in Immunology and Medical Microbiology. As he rose through the academic ranks from graduate assistant to tenured professor with joint appointments in the veterinary and medical colleges, to visiting professorships in clinical oncology, Thompson’s vita grew thick with documentation of his scholarship in immune-mediated diseases. As a capstone to his career in Florida, he served as executive associate dean of the college of veterinary medicine.

Like many ex-athletes, Thompson has never given up sports. “The last time I vaulted was six years ago at a local high school. Some students were having a little trouble understanding the technique, so I grabbed a pole and jumped over a 10-foot bar in my street shoes and neck tie.” Thompson remembers that he vaulted a couple more times before he ended up coaching the team for four years. Thompson likens his role of an administrator to that of a coach—fostering inspiration and encouragement.

Although Florida was a wonderful home, the recent transplant doesn’t think it will take him long to adjust to Tennessee. “I’m very much a woods and mountain sort versus a bathing suit and beach man,” he admits. “I like the woods and evening campfires,” he beams. —Patricia McDaniels
Jerry Baird of Grainger County, Tennessee, recently committed his estate estimated at $4 million to the Institute of Agriculture for the benefit of the Jerry Baird Organic Horticulture Research and Education Program.

Born in Lafollette, Baird remembers having a two-acre plot of land of his own as a 14-year-old boy, growing vegetables and corn. He also worked for other farmers for 50 cents a day and a hot meal. After a two-year tour in the Army, Baird became an Army technician and worked for the Army Reserves.

While in the service, Baird would visit East Tennessee on the weekends to compete on the stock car racing circuit. In the late 1960’s before the sport became what it is today, he raced a 1967 F Class modified production Chevrolet Camaro at Charlotte Motor Speedway, Bristol, and Rogersville. He set three world records in his car class during this time. Baird’s garage still holds a 1957 Chevrolet that took home 15 trophies in local races in the early 1970’s, as well.

Baird had an opportunity to purchase a small farm in Grainger County in 1980, which he visited on weekends and holidays, knowing that this was where he would retire. In 1993, he moved to Grainger County and has been a full-time farmer ever since.

Baird’s devotion to organic practices and standards is clear when you visit his farm. He is quick to say “if it doesn’t come from Mother Earth, it doesn’t go on my farm.” Over 20 years ago he noticed that tomatoes were grown with non-natural fertilizers and pesticides, so he decided to start growing everything naturally.

Today he grows watermelons, cucumbers, cantaloupe, tomatoes, okra, peaches, apples, corn, and sweet potatoes using only natural fertilizers and manure. He grinds his own corn and produced more than 1,000 pounds of corn meal in 2007.

Baird’s estate will someday create the Jerry Baird Organic Horticulture Research and Education Program in Plant Sciences. This program will
Campaign Update

The Institute of Agriculture continues to make excellent progress in the University of Tennessee Campaign for Tennessee. Thanks to generous alumni and friends, as of Sept. 30, the Institute had received over $71 million in gift commitments, placing it at 84 percent of its $85 million goal. Other units of the University of Tennessee range from 38 percent to 92 percent of goal achieved. The campaign is currently near its midpoint and will be completed on December 31, 2011.

Dr. Joe DiPietro, vice president for agriculture, said, “Thanks to generous and loyal alumni and friends we have already exceeded our original goal of $55 million and are making superb progress toward our new goal of $85 million. We are especially grateful to our volunteer Campaign Executive Committee and its chair, Charles Wharton, UT Board of Trustee member from Winchester, Tennessee. Charles and the late Julie Wharton made an exceptional leadership gift to the campaign and other members of the board have been generous with leadership gifts as well.” Other members of the board include Waymon Hickman, Ben Kimbrough, Milton Magee, Myers Parsons, Jim Rainey, Jeff Ray, Al Samsel, Jim Webb, and Steve Williams.

Buddy Mitchell, associate vice president for agricultural development and government relations, said, “While good progress has been achieved, over $150 million in needs have been identified in the Institute of Agriculture. Many of these needs remain to be funded, and much work is yet to be done in the Campaign for Tennessee. We look forward to working with the Institute of Agriculture administration, faculty, and staff, and our volunteer leaders in the days ahead to maximize the potential impact of the Campaign for Tennessee on the UT Institute of Agriculture.”

Regional campaigns will be conducted in each grand division of the state to involve more alumni and friends of the Institute of Agriculture in the Campaign for Tennessee.

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Charles Wharton, chairman of the ag campaign, said “private gifts are essential for the UT Institute of Agriculture to fully achieve its important mission of service to our state’s agriculture, natural resources, family and consumer sciences, and veterinary medicine programs. The campaign will provide scholarships for deserving students, research support to solve critically important problems and create new opportunities, faculty incentives for exceptional performance, and innovative extension programs. The Institute of Agriculture is an exceptionally productive part of the University of Tennessee that provides many outstanding programs and service for our state. We are pleased that the campaign will enrich and strengthen the Institute and look forward to making this campaign a success for these deserving programs.”

assist UT AgResearch, Extension, and College of Agricultural Sciences and Natural Resources in organic farming research, teaching, and outreach.

The UT Extension Office in Grainger and surrounding counties will continue to have an exceptional resource to showcase Baird’s organic farm. Baird is always eager to teach others how a small number of acres can produce a good variety of organic vegetables and produce. Anthony Carver, Extension director for Grainger County, is using the farm for local extension variety trials, as well.

Organic horticulture is an emerging venture for the Institute of Agriculture. UT AgResearch has dedicated property and other resources to organic farming research in recent years, and two new faculty members are on board in Plant Sciences to oversee this program. Dr. Annette Wszelaki and Dana Saywell are attracting grants and contracts to assist the academic, research, and extension programs of the Institute of Agriculture in organic practices. Jerry Baird’s generous commitment will be of great assistance to the future of this growing area of agriculture in Tennessee and across the country. –Rhodes Logan
Growing green markets

IN RURAL POLK COUNTY, A FARMER’S MARKET TAKES ROOT

Watermelons and cantaloupes, peppers, cucumbers, and tomatoes. These locally grown delights await visitors to Debbie Hair’s booth at the new Chilhowee Farmers’ Market in Benton, Tennessee. She also sells sweet potatoes, okra, sweet corn, muscadines and scuppernongs.

Back home at Cookson Creek Farm in Ocoee, she and husband Clarence are planting strawberries for next year’s harvest—the first to be locally grown and sold in rural Polk County.

“We diversified our livestock operations about eight years ago,” Debbie Hair says. “I tried selling produce direct to the public at a stall in town then, but I just didn’t have any of the advertising or signs to make it a success. The Farmers’ Market has helped very much.”

In Benton, and in communities large and small across the state, UT Extension has worked to launch and support these desirable markets through technical advice, forging public-private partnerships, and helping to pursue funding. To consumers, farmers’ markets offer convenient, one-stop shopping for wholesome, locally grown products. To farmers, the markets represent an additional outlet for their goods plus a chance to interact with an appreciative public—one that helps them preserve their farmland.

The Center for Profitable Agriculture, a partnership program between UT Extension and the Tennessee Farm Bureau Federation, has helped vendors and markets alike. City and county officials assist with planning, location, taxes, and other issues. Ag enhancement funds from the Tennessee Department of Agriculture help a number of markets and some are also assisted by USDA rural development grants.

UT Extension Agent Greg Paxton sees growth for Polk County’s market in the future. “I believe we’ll be able to pull in vendors from neighboring counties.” He also sees a new venue for Extension programming. “Interest in home canning is on the rise. Here we have an outlet for people to buy and also to bring some of their produce out here to sell. We see a lot of opportunities coming out of the market.” —Margot Emery

Public-private partnerships forged by UT Polk County Extension Agent Greg Paxton and County Executive Mike Stinnett led to the creation of the Chilhowee Farmers’ Market in Benton, Tenn. Extension agents have helped launch similar markets across the state.
The last time dairyman Robert Scarlett of New Market heard, there were only 550 dairies remaining in operation in Tennessee—a decline of 500 across the past six years. The dwindling number either “makes me pretty special or a dying dinosaur,” he says drily.

But dairying is in his blood, as it is for the Kelley family in White House, Tennessee. Generations of Kelleys have been milking cows for 125 years. Despite a proud record of producing Grade A milk for 40 years, Phillip Kelley says times have never been as tough.

“We’ve never had this close a ratio between the price of milk to cost of feed. Our input costs have doubled, and our income’s maybe gone up 25 percent,” says Kelley, who farms with his 83-year-old dad and wife.

Scarlett and Kelley, and dairies like theirs across the state, are fighting to remain viable. Beset by high fuel, fertilizer, and feed costs, many dairymen also struggle with a critical problem: how to produce more, and higher quality, milk. Without gains, demand for their product is tenuous, as is the state of Tennessee’s dairying industry as a whole. Tennessee consistently ranks near the bottom in measures of milk quality, followed by its neighbors in the Southeast. The small size of many of the state’s dairies invites competition from larger operations in other regions of the U.S.

Three years ago UT mastitis researcher Steve Oliver sought federal grant funding to launch a combined research and education program to try to assist the state’s dairies, on issues of mastitis and other factors associated with milk quality. Although that funding proved elusive, he, UT Extension, the Tennessee Department of Agriculture, and dairy industry partners pooled their resources to launch the Tennessee Milk Quality Initiative.

The Tennessee Quality Milk Producer program, or TQMP as it is known, provides dairy operators with information and technical tools necessary to decrease mastitis, boost milk production and quality, produce a safe and high-quality raw milk product, increase profitability, and enhance farm sustainability.

To achieve all of that, says UT Extension Specialist Kristy Campbell, it was necessary to take producers back to square one.

“We wanted to get everyone on the same page with their operations. So in the three modules we taught, we started with the basics and worked forward. For some it may have been a review of things they were already doing, but for others it was a reminder of practices they may have forgotten. Producers, like the rest of us, fall into habits sometimes that are not necessarily the best ways of doing things to benefit their operations.”

Last year, 208 Tennessee dairy producers completed TQMP’s first three educational modules in workshops offered at regional points throughout the state. As incentive to participate, the Tennessee Department of Agriculture offered producers a 50 percent cost share on equipment and supplies—a hefty increase over the standard 35 percent cost share it was offering that year.

“Everyone benefitted,” says Oliver. “We couldn’t have succeeded with the program without the Department of Ag’s help, and their cost share increase was an incentive to producers to attend and get information aimed at helping them improve their operations.”
Campbell estimates the first year of the TQMP reached 37 percent of producers from 48 counties in the state. This year she hopes to reach the majority of remaining dairies and is considering developing a DVD-based version to better facilitate distribution of the training, so that UT Extension agents could offer it to producers in their counties. She and Oliver also plan additional training modules to be offered on an ongoing basis, ideally every six months, if resources permit.

If mastitis and high bacteria counts in milk can be lowered, milk production will increase. Campbell sees it as a first step at making the state’s dairy industry more competitive. “With higher quality milk, producers are eligible for premiums from their processors and cooperatives. One of the exercises I have producers do is to put pencil to paper to calculate what that premium would mean to their bottom line. Plus healthier cows produce more milk, so that increases the volume they’re able to sell.”

Bacteria counts of milk have to do with cow health, but they also are affected by equipment maintenance, equipment cleaning, and hygiene. So, as Oliver and Campbell developed the TQMI curricula, they broadened their focus to include training on these issues. Here, industry partners, including the Valley Farmers Coop, proved valuable in stepping in and assisting with training. So did 12 Extension agents across the state. That considerable pool of knowledge was also augmented by the dairy producers themselves, who contributed ideas as they exchanged thoughts and talked at the presentations.

“I’ve always said one of the best teachers is another dairyman,” Campbell says. Having grown up on a family dairy farm herself, she’s in a position to know.

“I have such a passion for producers in this state because I grew up as one. My family had a dairy in Strawberry Plains started by my great grandfather. We had the top herd in the state for five years. My dad survived through the federal buyout in the 1980s, but eventually the economics were against him and he sold the farm. I saw how he struggled with that, and that’s where my motivation comes from.”

“Tennessee needs to keep its supply of milk local,” dairyman Kelley asserts. “We don’t want it shipped in from California or the Midwest. Our customers don’t want that either. It’s important to keep what we have.”

Oliver leads the research component of the TQMP. The initial stage of this work consists of conducting a comprehensive analysis of bulk tank milk quality of approximately 30 percent of Tennessee dairy farms. This yearlong study is a joint venture with the Tennessee Department of Agriculture. He is also screening for Mycoplasma spp., a highly contagious organism that spreads from farm to farm through cow sales and transfers. To facilitate this research, Oliver established a fee-based Tennessee Quality Milk Laboratory to serve the state’s dairy operators and veterinarians. “There really wasn’t a place to do this before, so we launched it.”

Oliver is working to secure additional funding to support on-site farm demonstrations and farm-based studies centered on boosting milk quality. Eventually, he would like to see the initiative move beyond Tennessee to encompass other southern states.

“I think the mentality here in the Southeast is that it’s OK to produce a less than high quality milk because we have some obstacles that are difficult to overcome, such as humidity and high temperatures in the summertime. We’ve got to get beyond that mentality, though, because we know there are farms in Tennessee that produce a very high quality product. They can compete with any dairy in the world. Now we need to convince the others, too, that they are capable of doing that. That’s what the Tennessee Milk Quality Initiative is all about.”

–Margot Emery
FOR EXPERIMENT STATION, FEWER THAN 14 SYLLABLES AND A MEMORABLE BRAND

One of the best-known artists in history was Michelangelo. Everyone knows the name. In more recent times, everyone knows Cher. Some of the older among us just liked Ike—the president that is, not the hurricane. In each case, the short moniker is all that is needed to call up a recollection of who they are and their claim to fame. They all got some great press.

One wonders if the press would have been so generous if, instead of their short nicknames, their full titles had been required: Michelangelo di Lodovico Buonarroti Simoni, Cherilyn Sarkisian or Dwight David Eisenhower.

We know something about long and puzzling titles. In our case, the name on the birth certificate from almost 140 years ago is “Tennessee Agricultural Experiment Station.” There are a couple of problems. No one quite knows what a “station” is and, while research is generally perceived as good, “experimentation” conjures up a more suspect image. Moreover, we have been told for years that the press is unlikely to use enough ink to write the whole name and that a reporter is unlikely to say the whole 14 syllables. As a result, the organization fails to get acclaim for our good deeds, and we suffer from anonymity. That’s an unhealthy state for an organization that requires public support.

The intent is to use a readily recognizable brand that is descriptive and sufficiently short so that those who report on us will actually refer to us. UT AgResearch does this, and we use it as our brand. The ultimate goal is to raise the profile of the Experiment Station. Our official title remains the same. Agricultural Experiment Station is the name used in federal legislation; that hasn’t been changed. We are simply assuming a brand that will make it easy for the public to report on us and remember us.

After all, one may not know who Eldrick Woods is, but everyone knows Tiger. -Thomas Klindt

The brand we have, after much deliberation, chosen to use. It has several virtues. It identifies us as part of UT, it specifies our research mission, and it generally describes the area to which research is directed.

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Taking healthy steps
OFFERING PRESCHOOLERS LESSONS IN FOOD AND PHYSICAL ACTIVITY

Several years ago nutritionist Janie Burney saw a problem. As she went about her daily life, she noticed a sudden increase in the number of children who were overweight.

“Those were children as young as two and three,” says the UT Extension Family and Consumer Science professor. With her specialized knowledge, she knew what the situation foretold: further weight gain, inactivity, poor health, decreased quality of life. Something had to change.

With funding from Governor Phil Bredesen and the Tennessee Legislature, Burney and Extension have developed and launched a program called Healthy Steps. Family and Consumer Science agents piloted the program in 58 childcare classes in 2007. This fall it expanded to 117 pre-kindergarten and childcare programs across the state, and Burney hopes more will be added soon.

Healthy Steps engages children ages three through five in learning exercises and physical activity designed to get the youngsters to move more and to broaden their taste for healthy foods. The kids engage in a variety of hands-on activities, from slicing fruit to mixing up tuna salad and making fruit smoothies using low-fat yogurt. They even venture into making a broccoli and cottage cheese casserole. And they like its taste!

“I let them wash green beans, break them, and cook them,” says Linda Young, an instructor with the Child Development Center in Fayetteville. “They actually eat them because they had something to do with the process.”

Burney seconded that thought: “We find that if the children make it themselves, they’re more willing to try foods that they thought they didn’t like. Teachers have reported some breakthroughs, and parents have been stunned to find that their child was willing to eat some of the healthy foods we’ve featured.”

It’s a matter of exposing children to tastes and activities early to shape habits in life. As the program teaches about nutrition and fitness, Healthy Steps also weaves in lessons about washing hands before handling food, learning to measure, and learning patterns and colors. Seasonal activity is also featured. Students learn to make applesauce and pumpkin soup in the fall and discuss where foods come from. In the spring, they grow sprouts in soil.

“With the help of Voluntary Pre-Kindergarten teachers in Knoxville—over 23 of them—we identified 10 popular themes that teachers like to address during the year, and we built lessons that focus on nutrition and health within those themes,” Burney says.

The program supplies participating classes with sports equipment, blenders, electric skillets and other equipment. Future growth of the program is dependent on continued funding from the state for these supplies and teacher interest to take part.

For now, though, the lessons appear to be hitting home. “Word seems to be getting out,” Burney says. “Agents asked for this program, and childcare providers report that they’re finding it useful.”

Healthy Steps is part of Tennessee Shapes Up, a statewide UT Extension initiative implemented by the Department of Family and Consumer Sciences in response to the obesity epidemic.
For 10 years, specialists with UT Extension have been helping Tennessee farm families secure the future of their operations through one-on-one analysis, workshops, and seminars focused on value-added agriculture. Through the Center for Profitable Agriculture, they have worked with farmers to identify new ways to add value to Tennessee-grown food and fiber products through processing, packaging, and marketing opportunities.

The value of their work can best be told by example. In 2000, Steve and Karen Dixon started looking for additional enterprises to generate new revenue for their third-generation family farm. Steve explored the potential for products such as squirrel corn with a plan to expand into fall decorations such as cornstalk bundles and straw bales. The same year, he submitted an application to the Center for Profitable Agriculture to help him evaluate his idea for his Franklin County farm and to get assistance with marketing issues such as pricing, packaging, and advertising.

Rob Holland, a Center specialist at that time, visited the Dixons to learn more about their ideas and find out how he could help.

Holland investigated wholesale and retail operations for bagged squirrel corn, cornstalk bundles, wheat straw, and other fall landscape decorations. He provided the Dixons with information about planning a value-added agricultural business, salesmanship, customer service, advertising, developing marketing materials, identifying product characteristics, and getting products to market.

At Holland’s suggestion, the Dixons contacted fruit-stand managers in Middle Tennessee and took orders for cornstalk bundles, since there seemed to be stiff competition for wholesaling squirrel corn. The Dixon’s sales grew from 2,000 bundles per year to 5,000.

“The cornstalk bundle business,” according to Karen, “achieved the goal of giving some business experience to our children. It was a process all five of us could do. Working with our children as business partners achieved a mutual respect for each other on another level. The business was great for our young children to earn some spending money and gain a sense of business.”

Their venture also created the opportunity to move into agritourism, when a nearby fall destination decided to close its operation. The Dixons again consulted the Center for Profitable Agriculture, which answered a variety of questions the family had about regulations, liability issues, and marketing. As plans progressed, the couple continued to consult with Center specialists and attended several workshops and conferences on agritourism planned in part by the Center.

Two years ago, the Dixons opened Grandaddy’s Farm to the public with a fall market, farm activities for families and school tours. The market offers decorative items for sale and farm activities like a corn maze, hayride to the pumpkin patch, moonlight hayride, half-mile nature trail to a spring and a farm animal exhibit.

In Robertson County, the Center helped Jeff and Julie Alsup of Honey-Huckle Hill Farm boost their agritourism venture from drawing 3,500 attendees in 2004 to 25,000 in 2007.

According to Jeff, “Megan Bruch (of the Center) took a special interest in our farm and was confident that we...”
could grow our visitor volume and gross revenue with a good, sound marketing strategy. She revamped our educational flyer and targeted it for distribution to one key market—4,000 teachers in Middle Tennessee. This has been the most effective marketing decision we’ve made so far.”

As attendance has expanded, so has the number of people employed by the operation. In the beginning it was just Jeff and one or two others. Last year, the farm employed about 40 workers—valuable job creation in a tight economy.

The Center helped Ed and Teresa Rollins of Giles County and their children Debbie and Robert add an additional revenue stream to their poultry operation by composting farm waste into a low-odor organic soil conditioner called R-GROW that the family processes, packages, distributes, and markets.

“It gives us a buffer for when poultry prices are down,” Ed says. In addition to the poultry and R-GROW, the family continues to raise cattle, maintain a hunt-lease agreement, harvest select timber on their property, and sell honey, diversity that is important in maximizing revenue opportunities, says Holland, who now serves as director of the Center for Profitable Agriculture.

Since its inception, the Center has paired with Tennessee producers on 135 full-blown analyses. Each takes an idea that a farmer has for a value-added enterprise and examines its potential from financial, marketing, and technical perspectives. Through workshops, seminars, tours, and e-mail and telephone consulting, the Center’s staff has assisted many more individuals with their ideas and questions.

“When we began 10 years ago, we felt like we were working on an identified need, but we weren’t certain,” says Holland, who now directs the Center. “We look back now and realize that we did hit the mark and are continuing to do so. The value of the work we provide is very large.”

As the Center continues to work with producers, Holland looks to the future. “I envision that we’ll continue to provide the one-on-one detailed analysis for value-added enterprises. In addition to that, I think we’re well-positioned to provide more proactive leadership—both for individual farmers and for alliances and industries. For instance farmers who may not have an idea necessarily but may have a unique set of resources on their farm are ripe in value-added potential. This also happens in our state from an industry standpoint. We are a national leader in beef cattle production. Is there some value-added potential that could spark from that type of resource, not from a single producer but from several?

“I think the Center’s focus can expand to include both individual analysis and broader, macro-level work.”

With those opportunities ahead, the future is bright for value-added agriculture in Tennessee.

You can learn more about the Center for Profitable Agriculture at http://cpa.utk.edu, by calling (931) 486-2777, or through email sent to cpa@utk.edu.
Alumni dream jobs

INSTITUTE GRADUATES MAKE THEIR MARK IN REMARKABLE PLACES

Dr. Christine Jenkins, director of academic affairs, Hill’s Pet Nutrition

Hill’s is one of the largest employers of veterinarians in the world. Jenkins completed a residency in Small Animal Internal Medicine at UTCVM in 1988. She oversees the company’s relations and Hill’s educational programs in the U.S. veterinary colleges and veterinary technician programs. In her work, she most values being a role model and mentor. “I like to share with students that I was a B student, and if I can do it, anyone can. You should pursue your dreams and not let anyone discourage you.” She particularly likes coaching women. “We have so many in the curriculum. It’s an important time to have more experienced role models for them—on how to balance their careers, be a mom, and a spouse if that is what they choose to do. I want to help others find that balance so they can enjoy life.”

Tera Bunch, agricultural educator, Lenoir City High School

Bunch graduated in ’06 with a B.S. in Agricultural Extension and Agricultural Education and is working on her master’s now. She guides 60 young minds in exploration of wildlife management, agricultural mechanics, and agriscience. “Working with students was the reason I went into education,” Bunch says. “I really enjoy watching as they develop and learn what I’m teaching. It makes me feel like I’m making a difference.”

Peter Hamel, supervisory park ranger

Hamel, B.S. Forestry, ’99, began his dream job as an intern at Yellowstone National Park. “It really changed my life. I’ve stayed with it now for 10 years solid and just love it.” When we caught up with him, he was working at Katmai National Park and Preserve in Alaska and about to transition back to Yellowstone. “I get to help visitors experience the wonder of our natural and cultural heritage. It’s rewarding to be able to really tailor an experience for a visitor and show them where our nation has come from, where it is today, and how those concepts are wrapped into our national parks.”

Institute graduates make their mark in remarkable places
Wayne Powell, senior manager, Kawasaki Construction Machinery

Powell says he has always loved tractors. “So much so that when I was 10, I wrote Deere to ask for a job! They wrote back a nice letter and told me to study ag engineering and call them when I got done. I was then focused on that goal. I attended UT starting in ag engineering but finishing with a B.S. in Ag Mechanization, ’74. When the Deere recruiter came to campus, I told him my story and he hired me! I have worked for different companies, but always with heavy construction equipment. Now I’m the senior manager, Service & Training, for Kawasaki Construction Machinery in Kennesaw, Ga. I have traveled to Sweden, Mexico, Japan, Canada, Trinidad, Colombia, and nearly every U.S. state. The job and challenges are different nearly every day, I know our equipment inside and out, and the people I have had the opportunity to work with throughout my career have been the very best.”

Dr. Kristina Carter, lieutenant, U.S. Navy

In her first year after completing her Ph.D. from the Department of Food Science and Technology specializing in Food Microbiology, Kristina Carter was commissioned as a lieutenant in the U.S. Navy. She completed Officers Development School and began service as division officer for the microbiology lab at the National Naval Medical Center in Bethesda, Md. There she leads a staff of 26 people. Her laboratory responsibilities include ensuring accurate and timely reporting of patient results, ensuring the laboratory is accredited and prepared for inspection, that staff are trained, certified, and competent to perform testing throughout all areas of the microbiology lab, and maintaining morale of staff and mission readiness for the Navy. She is also the technical laboratory specialist for 10 branch health clinics throughout the northeast region, she jointly teaches classes at the Uniformed Services University and is researching bacterial detection limits of platelet concentration using an automated culturing system. “I enjoy the diversity of my position,” Carter says. “It’s very challenging and rewarding. Each day presents a different and unique situation to determine a solution for.”

Bob Duncan, executive director, Virginia Department of Game and Inland Fisheries

Virginia’s new Game and Inland Fisheries executive director keeps “a beautiful orange UT throw rug” in his office to maintain some SEC esprit de corps in the agency he now leads. A 34-year wildlife professional and avid hunter, Duncan, B.S. Forestry, ’71, (with Wildlife option), M.S. Wildlife Management, ’74, has an abiding love of wildlife and the outdoors. He’s worked with everything from prairie chickens and ducks to deer and bears. As a graduate student studying under Mike Pelton, he researched the reproductive physiology of wild boars in the Smokies. “Imagine my surprise and delight a couple of years ago when I was asked to initiate a study of feral hogs on the coast of Virginia.”
In its 25-year existence, the UT Gardens has featured a little bit of everything—stunning flowers, beautiful and exotic plants, even ornate artwork and sculpture. What it did not have was an easily accessible and welcoming entrance. Until now.

On a sunny September day, the Friends of the Gardens invited the general public to celebrate the 25th anniversary of the Gardens and officially dedicate the new Friendship Plaza, which “Silver Anniversary Friends” (donors of $2,500 or more) helped to make possible. Their names were inscribed in a flowing ornamental donor wall. The Friendship Plaza includes a versatile bricked entrance-way and gathering place that can host special events. Friends of the Gardens collected and donated more than $150,000 for the project. The project took about two years to complete and involved more than 100 volunteers, business people, and university staff.

If you’d like more information about how to have your name inscribed on the Gardens’ donor wall or want to learn more about how to support the Gardens and its student scholarship program, mail in the envelope bound inside this magazine or call Mark Clark, associate director of Development, at (865) 974-5315—Chuck Denney