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UT Institute of Agriculture

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Dear UT Institute of Agriculture friends,

The institute places a high value on being responsive to the needs of our clientele. Our land-grant mission of research, teaching and outreach that changes lives is what this place is all about. Over the past year, we have been doing a lot of listening and evaluating. From these listening sessions we have developed “Four Pillars” to help guide our future efforts. This issue of our magazine explains what the pillars are and how they are driving us forward.

I’m happy to report that the job market is very bright for our graduates, and the surge in our enrollment reflects that. While student enrollment in agriculture programs has increased by 52 percent nationally, CASNR has experienced 32.8 percent growth from 2005 to 2011. It’s truly an exciting time for our students.

In Tennessee, the future of agriculture and forestry is also bright. Gov. Bill Haslam has challenged the state Department of Agriculture, the Tennessee Farm Bureau Federation and the institute to prepare a strategic plan for agriculture and forestry for the next decade. He set as a goal to make Tennessee No. 1 in the Southeast in the growth and development of agriculture and forestry. We are proud of contributing to a strategic plan that holds advancing Tennessee as its goal.

Go Vols!

Larry R. Arrington,
Chancellor, UT Institute of Agriculture
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DEDICATED

At Ag Day, Senior Vice Chancellor of Agriculture Buddy Mitchell joined with Chancellor Larry Arrington and UT President Joe DiPietro to unveil a plaque dedicating key areas of the Plant Biotechnology Building in honor of Robert and Nancy Burchfiel. “We thank Edith Burchfiel Cooper for supporting UT and the institute through her memorial for her parents,” said Arrington. “Mrs. Cooper’s gift to the institute supports our programs and people, and we express appreciation to her, her estate and trustee for this gift.”

BEetter BEans

It’s estimated that the UT Soybean Breeding and Genetics Program has given farmers a 5 bushel per acre yield advantage in recent years. That gain is expected to increase with two new varieties.

Released in partnership with the U.S. Department of Agriculture’s Agricultural Research Service, new variety JTN-5203 features high yields with exceptional resistance to multiple races of soybean cyst nematode, frogeye leaf spot, stem canker and sudden death syndrome.

Later this year, in cooperation with USDA-ARS and the University of Missouri, scientists will release JTN-4307. This maturity group V soybean also exhibits resistance to multiple SCN races, along with resistance to FLS, Southern root knot nematode, Reniform nematode and stem canker — traits that modern plant biotechnology is helping make possible.
**VISIONARY**

Visionary animal welfare advocate Temple Grandin was the keynote speaker at April’s College of Veterinary Medicine Social Work Summit. Grandin is iconic for her designs of humane livestock handling facilities and for finding ways to use the gifts of autism in her life and career. She told a standing-room-only audience that it’s important to understand that animals are sensory beings — and so are people with autism. “An animal’s memories are sights, sounds, smells, taste and touch. ... To understand animals, we must be much more observant of the small details that really, really matter. You have to work at it and get away from using words. When we think in words, we tend to oversimplify.”

**COMFORTABLE COWS**

Those sand-based free-stalls look really comfortable, don’t they? Cows at East Tennessee AgResearch and Education Center’s Little River Animal and Environmental Unit have access to sand-based stalls between milkings. At the unit, housing and management factors on the welfare of cows are major areas of study, with researchers analyzing changes in behavior, health or productivity of dairy cows, heifers and calves for optimal production. Since November 2011, a total of 18 animal and environmental research projects have been launched at the new Walland, Tenn., complex, with many more planned for the future.

**SUCCESS**

Institute fisheries biologists are finding success in efforts to restore lake sturgeon in the eastern reaches of the Tennessee River. Using trotlines, they are catching sturgeon of different ages, signifying that successive years of releases are working. Some fish are tagged; all are returned to the water. Our scientists are also discovering sturgeon are moving through the river’s system of locks and dams.
Since joining the Institute of Agriculture 21 months ago, Chancellor Larry Arrington has been doing a lot of listening and evaluating. From those listening sessions, he’s developed “Four Pillars” to lead UTIA’s future efforts. We sat down with Arrington to learn more about the four pillars and his vision for UTIA.
Advancing Academic Excellence — Achieving academic excellence throughout UTIA requires investments in students, faculty and programs. Resources to support efforts in new and emerging areas are critical to advancing the institute. Within UTIA, our programs, people and resources are committed to providing students in the College of Agricultural Sciences and Natural Resources and the College of Veterinary Medicine with opportunities to stretch their academic abilities while expanding and enhancing research and outreach.

Delivering Discoveries — UTIA scientists generate numerous technologies that address global problems, but UTIA needs to better support faculty to facilitate the development from startup to marketplace. Private industry partnerships will help to accomplish this and deliver our inventions and intellectual property to Tennessee producers.

Promoting Hands-on Learning — Our graduates and 4-H youth face a fast-changing society and must develop skills to adapt to and drive the change. Providing outside-the-classroom experiences affords them with relevant, real-life opportunities to put the knowledge gained via traditional methods to practical use. This prepares them for the real world, heightens their status for potential employers, and helps UTIA achieve its mission of advancing society.

Serving Our Communities — Community access to the resources and programs of UTIA are vital to our state. We will continue to work with our partners in communities throughout Tennessee to provide quality programs that address the unique needs and issues of each community we serve, whether we’re talking about geographic communities or communities of shared interests.
In my first year as I got to know the institute, I paid attention to what people said they needed from us. I took a lot of notes and kept looking for themes, and from these, four areas of concentration emerged. The more I thought of them, the more evident they were as foundations, pillars if you will, for who we are and what we do.

We are very fortunate to have a good foundation laid by those who were in our positions before us. Some other states lost sight of the land-grant mission, but UT didn’t. The land-grant mission of research, teaching and outreach that changes lives is what this place is about. We are committed to keep doing what the people of Tennessee need us to do, which means we understand our value is being in every county in the state, positioned to provide research based on regional needs, and providing students with life-ready preparation through undergraduate, graduate and professional educational experiences.

**WHAT INSPIRED THE FOUR PILLARS?**

Advancing Academic Excellence — We want to provide the very best experience for our students, and we want to recruit the very best students and faculty. In order to do that, we need to increase our capacity with scholarships and student learning opportunities, create more endowments for faculty recruitment and retention, and form partnerships to advance in certain areas of demands.

Delivering Discoveries — We have to find a way to move the innovations created within the institute into the marketplace. It’s a common business startup issue. Our faculty members are great scientists, and we are making significant advancements through research, and we need opportunities to get these important initiatives into the marketplace.

Promoting Hands-on Learning — Industry continues to tell us that students need applicable, hands-on experience, both in the U.S. and internationally. We have the perfect venue to do this beginning with our 4-H program. We need to get more people in the pipeline with these out-of-the-classroom experiences.

Serving Our Communities — You can slice the community pie in several ways. I tend to think by county — supporting local 4-H or agriculture programs. There’s also regional research centers or by area of interest, like the National Bobwhite Conservation Initiative. No matter how you slice it, UTIA is a part of our communities.

**TELL US A LITTLE BIT ABOUT THE FOUR PILLARS:**
WHAT ARE THE CHALLENGES FACING UTIA AND HOW DO THE FOUR PILLARS IMPACT THESE?
We are very fortunate to have a governor who believes in and is very supportive of higher education. Unfortunately many of the areas in the institute are non-formula units like research and Extension. For non-formula units, which are not budgeted by funding based on enrollment, we have to work with the state on the best paths for funding.

The pillars we’ve identified help us address the challenges we face by providing focused partnership opportunities our constituents can grasp and be a part of. Although we have challenges, the future is bright as we go forward.

WHAT OPPORTUNITIES ARE AHEAD FOR THE INSTITUTE AND WHAT RELEVANCE ARE THE PILLARS TO THE FUTURE?
Over the next decade we have to make sure we are moving in the right direction so we remain relevant. We have to be proactive in engaging stakeholders so they can help us make good decisions. The pillars allow for this navigation and engagement. Our regional advisory councils help us identify what concerns Tennesseans today and tomorrow, and we can use the pillars as vehicles to move us into the future.

The governor has challenged us, along with other ag leaders, to come up with a 10-year strategic plan for agriculture in the state of Tennessee, including a substantial increase in agriculture production to the economy of Tennessee. It’s an opportunity to speak to all the people of Tennessee about the importance of ag and how UT fits in.

WHAT IS YOUR VISION FOR UTIA IN THE NEXT 10 YEARS?
We have to be relevant and responsive. We need to closely align our programs with the needs of the state. We are doing business a lot differently today than we were 10 years ago. Technology forces us to change, and we have to be changing with it. If we don’t make good decisions now, it’s going to be very difficult to keep up. Again, these four areas of focus will help make us relevant and reliable for the next 10-plus years.

WHAT WILL THE PILLARS MOVE UTIA FORWARD IN ATTRACTING QUALITY STUDENTS AND FACULTY, AS WELL AS ENHANCING ACADEMIC PROGRAMS?
The pillars will help us raise the private gifts we need for scholarships and faculty endowments. They help us communicate what’s important to us and the state of Tennessee and what we’re about. People can see themselves fitting into our mission.

We want to be more internationally involved in our academic programs but we don’t have enough faculty to let them explore it. The same is true with international travel and internships. We don’t have enough students with international experience, and there’s a big push by industry for that right now, so that’s a big push for us.

WHAT CAN ALUMNI AND FRIENDS DO TO SUPPORT THESE EFFORTS?
There are several ways to support our efforts. Become advocates for us through grassroots support; help us think about who could invest in our mission and who cares about what we are doing; help us talk to them, communicate our needs and how it will make a difference.

We recently received an endowment from a UT alumna (Janet McKinley – see story on page 22) who did not have a tie to the institute, but she heard me talk about our communities. We explained what our role was and what it meant to the state, and she saw how it fit with her. Her gift allows students to go from Knoxville to Spring Hill, Tenn., for experiential learning opportunities, ones that they, in turn, will bring back to the classroom.
Advancing Academic Excellence

Achieving academic excellence requires investments in students, faculty and programs. The new Brehm and Food Science buildings give them all the tools to succeed.

Photos by Rich Maxey
Students, faculty and staff in the Department of Animal Science and the Department of Food Science and Technology made a move for the better in January as they left behind their temporary quarters in McCord Hall for their highly anticipated new facilities.

The renovated Brehm Animal Science Building and the new Food Science Building feature state-of-the-art classrooms, labs and student study areas. Brehm’s renovations also feature a computer lab and a modernized and expanded arena and holding area, while the new Food Science Building houses an updated sensory evaluation lab and a pilot processing plant.

To alumni, the new buildings are unrecognizable compared to their predecessors. To students, they are inspiring.

“The most exciting thing about the Food Science Building is the laboratories, which are well laid out and have sufficient space,” says Ph.D. student Vinay Mannam ’13.

“The graduate student office in the new building is probably the best student office on campus, with a river view and lots of sunshine. And there’s plenty of greenery around the building. The new building will be a great attraction to prospective graduate students as it is peaceful, elegant and energetic.”

“As a senior animal science major, I’m really excited to have class in new classrooms that are all updated and have everything we need for learning,” says Sarah Orr ’13.

“As a member of Block and Bridle, it’s really exciting to be out in the arena and see our students and members helping with Round Up, and also to see potential students, who are 4-H and FFA members, being involved with livestock and actually learning in our new arena.”

Bill Brown, dean of AgResearch, says the buildings open up new horizons for both departments. “These new state-of-the-art laboratory facilities and, in Animal Science, the animal holding and working facilities will increase the capacity of our research programs and undergraduate and graduate teaching, as well as enhance the capacity of our Extension programs to producers.

“And it’s ditto for Food Science. Research, teaching and outreach will all strongly benefit from new state-of-the art classrooms and labs, including the pilot plant, sensory evaluation lab and domestic kitchen. We couldn’t be happier with what these facilities will mean for the institute as a whole.”

– Margot Emery and April Moore Massengill
We want to provide the very best experience for students and clients, and to recruit the very best students and faculty.

The University of Tennessee Veterinary Medical Center is proud to announce the completion of the new 60,000-square-foot expansion of its equine hospital on the UT agricultural campus. The project includes extensive upgrades to the infrastructure of the existing equine hospital and adds a 30,000-square-foot Equine Performance and Rehabilitation Center.

“We have tremendous people with tremendous expertise,” says David Anderson, Large Animal Clinical Sciences Department head. “But we had outgrown a facility built in the mid-70s, so what we didn’t have was a tremendous workspace.” The $20.9 million, nearly 85,000-square-foot project, which includes both the Equine and Farm Animal hospitals, changes that. Construction and renovation of the Farm Animal Hospital is expected to be completed early this summer.

“This state-of-the-art facility will enable us to set the tone for the future of veterinary medicine within the performance and rehabilitation specialty,” Anderson says. “With the expansion, the UT College of Veterinary Medicine has made a commitment to not only define excellence and innovation, but also to bolster the educational opportunities for students pursuing rural practice and for regional large animal veterinarians.”

Carla Sommardahl, DACVIM (large animal), and internal medicine section chief at the UT Equine Hospital, says the new Charles and Julie Wharton Intensive Care Unit enhances patient care. “In our ICU, we now have an area where we can sit and work, and still monitor our patients.” Sommardahl adds that the unit allows intensive care patients to be separated from the general population. “The ICU patients need a little bit more protection since these are animals that are the sickest and may be more susceptible because of compromised immune systems. With our new facility, we are able to watch them carefully in an area of their own with someone here 24/7 monitoring them and providing treatments.”
Steve Adair, director of the Equine Performance and Rehabilitation Center says, “The center adds an exciting new dimension to the UT Equine Hospital that closes the circle on the concept of ‘total patient care.’ The new rehabilitation center contains the expertise, resources and equipment to manage patients that benefit from physical therapy, adjunctive treatments and exercise conditioning.”

This unit includes a full-sized indoor riding arena; a lameness examination area with multiple surface types for lameness diagnosis during exercise; a resistance-free walker for controlled, untethered exercise; in-ground, underwater treadmill for exercise with resistance but reduced body weight; equine cold saltwater spa with hydrotherapy for treatment of laminitis, swelling, inflammation and soreness; podiatry center with a hot forge and expert farrier services to provide routine and therapeutic shoeing for lameness, postoperative management, limb diseases and routine hoof care. Additionally, a dynamic video endoscope will allow for the diagnosis of upper airway disease in the horse while it is being ridden or during treadmill therapy.

The EPRC is also supported by a team of board-certified radiologists and the Veterinary Medical Center’s John and Ann Tickle Advanced Imaging Center, which houses MRI, CT and nuclear scintigraphy for large and small animals. The EPRC is integrated with complementary therapies including hyperbaric oxygen therapy, regenerative (stem cell) medicine, chiropractic and acupuncture. These services coupled with the medical center’s board-certified expertise make this one of the most comprehensive centers for the diagnosis, treatment and rehabilitation of horses in the world.

**PARTNERING WITH PRACTITIONERS**

Anderson views the facility as an extension of the local veterinarian’s practice and anticipates maintaining a strong partnership with practitioners. “We will continue to foster an atmosphere of collaborators sharing the mission of providing excellent care for animals, which will enable us to stay on the leading edge of meeting the needs of the practicing community,” Anderson says.

“When practitioners refer cases to us, they are, in effect, simply bringing more people onto their health management team for their clients, and we want to emphasize our role as a resource for them to expand their practice through our facilities and expertise.” – Sandra Harbison
Center for Renewable Carbon Contributions:

- **Dr. Niki Labbé** is leading an effort investigating the chemical composition of two important energy crops: poplar and switchgrass. Understanding the natural variability of biomass as potential chemical feedstock is key to enabling the commercialization of advanced fuels.

- **Dr. Berenger Biannic**, CRC research associate, won first place for a postdoctoral submission at the inaugural Southeastern Conference Symposium. His winning poster discussed a new methodology using innovative catalysts that give access to high-value chemicals in high yields from lignin subunit models. The poster was among 80 submitted under the topic “Impact to the Southeast on the World’s Renewable Energy Future.”

- **CRC research** has demonstrated the potential use of lignin as a feedstock for high-value, high-volume products like carbon fiber and carbon foam, as well as nonwoven fabrics from polymer fiber. Carbon foams from lignin are projected to improve energy efficiency in home heating by 50 percent. This advancement is currently under evaluation by the UT Research Foundation.

- A recent **CRC submission** appearing in the journal Composites A remains among the top 10 downloads from the journal and the No. 1 cited article. This attests to the CRC’s leadership in the science and technology of advanced biocomposites.
It’s called the Southeast Partnership for Integrated Biomass Supply Systems, or IBSS, and Tim Rials, director of the UT Institute of Agriculture Center for Renewable Carbon, is managing the $15 million U.S. Department of Agriculture effort. The CRC’s contributions will add up to approximately one-third of the massive research effort, but the team includes dozens of scientists from multiple institutions and scientific disciplines. (See http://www.se-ibss.org for participants.) Together they are working to develop sustainable feedstock production systems for energy crops grown in the Southeast, specifically switchgrass and woody biomass.

“The goal is to provide a predictable and reliable supply of biomass for conversion to advanced ‘drop in’ biofuels — biofuels that fit in today’s refineries and pipelines, and can power today’s automobiles and aircraft,” says Rials. “We are ultimately focused on demonstrating the production of advanced biofuels from sustainable sources of lignocellulosic biomass. The effort is targeting perennial switchgrass, annual sorghum and short-rotation woody crops like poplar and pine.” He says one goal is to match the economic and environmental performance of each feedstock with a preferred conversion platform.

Rials says the partnership is working to improve growing, harvesting, storing and converting biomass by developing genetically superior bioenergy crops, improved and environmentally sound production practices, and better harvesting and processing logistics that balance economic, social and environmental sustainability factors.

The IBSS Partnership is also working to incorporate innovative outreach methods to increase public awareness of biofuels, including metrics for landowners and community groups involved in decision-making regarding the emerging biofuels industry.

Education is another goal. In 2012 the IBSS Partnership created the SouthEast Energy Development Fellowship program for students. Participants spent a summer tackling real-world problems in feedstock production, feedstock logistics, conversion, or markets and distribution of biofuels. They also visited biomass production sites, industrial partner facilities, national laboratories and universities. The first SEED Fellows included undergraduates from Tuskegee University and Auburn University. (See http://www.se-ibss.org/about/seed-fellows.) The 2013 class will be announced soon.

The partnership formed in September 2011, and now, approximately 20 months into the five-year effort, the partnership is making solid advancements towards its goals. – Patricia McDaniels
Dr. Sharon Patton

WHAT IS YOUR FAVORITE PARASITE?

Oh, it’s hard to say. My favorite used to be strongyles in horses. Now it’s heartworms in some way because there have been so many recent changes in them, and I have to keep up to date with them. Toxoplasma is always up there. But then, of course, hookworms. How can you not love those voracious bloodsuckers? I just love them all so much! I love their life cycles and being able to teach things that will improve animal and human life.

THIS IS YOUR 36TH YEAR TEACHING THE PARASITOLOGY COURSE. WHAT EXCITES YOU?

Everything! But it doesn’t take a lot. I’ve looked at nematode eggs on a fecal flotation who knows how many times now, but folks in the lab will call and say “you’ve got to come down and see this!” and there will be something we didn’t expect or the slide will be completely covered with hookworm or roundworm eggs. While I’ve seen it many times in my life, I just can’t take my eyes off it! I always remind students to treat feces with respect since they contain many clues to an animal’s health.

YOU’VE WON SEVERAL NATIONAL TEACHING AWARDS AND ARE KNOWN FOR TELLING YOUR STUDENTS, “REMEMBER, I LOVE YOU.” HOW DO YOU HELP THEM REMEMBER THINGS?

My classes can be like an old-time gospel meeting with students yelling out answers. I ask questions and want them to answer so I can hear them — so the class next door can hear them. There are some things they should never forget. I’ll say, “Hookworms are …” and they’ll yell, “VORACIOUS BLOODSUCKERS!”

HOW DO YOU PREPARE YOUR STUDENTS FOR CHANGE?

Most of what I teach I was never taught. The environment and international travel has changed. If I were teaching the same lectures I did 36 years ago, I would be useless. That is the same for them as they go into veterinary practice. There is always change. Remembering what I say is not the same as remembering the principles: parasites will always have life cycles, and there will always be infective stages. They need to understand how that works and understand how to stop the infection, not by just giving a drug, but by stopping the transmission.

ARE THERE ANY PARASITES NAMED AFTER YOU?

None. I tell my students that all my colleagues (younger and older) have something (a parasite, a worm, an arthropod, a protozoa) named after them, and I do not. I remind them to name something after me.

YOUR BLOOD RUNS ORANGE.

Oh yes! I always wear orange on basketball and football game days, and when we play Alabama or Florida, I help the team out by wearing orange all week — even orange socks!
“In Jamaica, where I am from, my dad was basically a subsistence farmer. There was a person who’d come around and give him advice on new varieties and on such things as planting in rows instead of holes. I just thought that guy, an agricultural instructor, was a good person because he helped my dad and others like him. I ended up going to agriculture school because I wanted to be that guy. In graduate school, I had the opportunity to study heat stress in poultry. I thought heat stress would be something relevant to small farmers in Jamaica and other tropical countries, and it’s also relevant to integrated operations here and worldwide. Heat stress is a real issue, because chickens do not have sweat glands and can easily die from heat. Through my research and publications on heat stress, I’ve shared information with Tennessee producers and around the world on how to manage heat stress in poultry. Through my teaching I’ve prepared students to enter the field of poultry production. There is real demand there. The students quickly find jobs … My original thinking was that I wanted to help small producers, and now I actually feel that I’ve contributed something. By specializing in poultry, in the final analysis, I think I’ve achieved what I started out to do.”

NICOLE DELFRAINO ’13, ANIMAL SCIENCE MAJOR

“I entered UT wanting to go to vet school. That’s what I wanted to do because I love animals. My sophomore year, I went to the CASNR Career Fair and started talking with a Tyson recruiter about the poultry production plant near my hometown in Shelbyville (Tenn.). He asked for my resume to apply for an internship, and I thought, ‘OK, let’s see where this leads.’ I ended up going through several interviews at their offices in North Carolina. They offered me a summer job working in Shelbyville. I worked as an operations intern, testing water quality and talking with producers on what to do to improve water quality at their production houses. By the end of summer, I had been to every farm that feeds the complex. On my last day, my boss told me I had made an impact. It was nice to actually make a difference. For me, working in the poultry industry isn’t all about making money at my job, it’s about feeding people. Tyson is one of the biggest companies donating food to other countries to feed the hungry, and I’m a part of that by working for them. Tyson asked me to come back for my short Christmas break. My mom asked me why I was going back, and I said, ‘Because I like it.’ It may be a job, but I don’t feel like it’s work because I enjoy what I do. I’m hoping to continue working for Tyson after graduation. Tyson calls itself a family, and that’s really true for me. They’re my family now. It’s awesome!”

MICHAEL SMITH, PROFESSOR OF ANIMAL SCIENCE

“In Jamaica, where I am from, my dad was basically a subsistence farmer. There was a person who’d come around and give him advice on new varieties and on such things as planting in rows instead of holes. I just thought that guy, an agricultural instructor, was a good person because he helped my dad and others like him. I ended up going to agriculture school because I wanted to be that guy. In graduate school, I had the opportunity to study heat stress
Growing New Horizons

Mary Wortham, a junior in landscape architecture, didn’t spend last summer pulling weeds. Her paid internship, co-sponsored by the Cumberland County Master Gardeners and UTIA’s Plateau AgResearch and Education Center, included drawing a landscape plot for the center’s Discovery Gardens, coordinating installation of the gardens’ waterfall feature, and experiencing how UT Extension and UT AgResearch reach into local communities through programs that include consumer and family sciences as well as farming and gardening. “It was such a learning experience. The research and community outreach was real. I didn’t know anyone was doing this,” she said. Walt Hitch, the center’s director, says Wortham learned the intricacies of agricultural research by assisting scientists during site visits. For example, she worked in the field learning how roses are developed for commercial sale. The organizations she served considered her such a success, she has paved the way for another student who will serve as intern this summer.

Promoting Hands-on Learning

National studies find that employers give preference to students with out-of-classroom experience. The institute is committed to ensuring its students have access to high-value opportunities for experience in their fields.

Our Tottinham Hotspur

Turfgrass management graduate Robert Moser, ’12, found new horizons interning with one of England’s top “football sides,” Tottenham Hotspur, from May through November 2012. Moser helped open the club’s new training center, one of the largest in Europe, featuring more than 15 ryegrass pitches for use by juniors from the age of 8 all the way up to the Premier League’s stars. “Throughout my stay, I met many individuals who showed me a different outlook on turfgrass management and life in general. Study abroad gave me a look into the professional attributes and lifestyles of a culture that changed my perspective and outlook on work, life, and the things that matter most to me.”
IN HIGH COTTON

Food and agricultural business major Cory Vineyard expanded his horizons interning in Extension cotton programs in Mississippi last summer. Back on campus in the fall, he conducted a special project calculating the economics of irrigation and plant growth regulation applications on final yield output. “I am planning on going to graduate school and conduct my thesis on an issue with cotton. Being from East Tennessee, the internship was a new and exciting adventure into the world of cotton. With cotton acreage going down each year in the United States, I hope the research I conduct in the future will put cotton back on top of the list of commodities grown in this region.”

A DIAMOND IN THE LANDSCAPE

Ivy Renfroe may be best known around campus as one of the star pitchers for the Lady Vols softball team. She’s helped lead the team to two NCAA Women’s College World Series appearances and posted a personal win-loss record of 92-23. But this star athlete has cultivated an interest outside the softball diamond … landscaping. Renfroe is a plant sciences major who graduated this spring with a degree in landscape design. Her academic experiences have included an internship at the UT Gardens in Jackson. Renfroe credits her grandmother for introducing her to the joys of gardening. Some of her earliest memories are of helping her grandmother water flowers. Yet, she says it’s her time at the UT Institute of Agriculture that has broadened her knowledge and passion for plants. While her future career plans are uncertain (she is considering playing softball professionally after college), Renfroe is a competitor who will excel whether it’s in the pitcher’s circle or a career in the green industry. And Vols, of course, will be rooting for her either way!
FARM GIRL AT HEART

JANET MCKINLEY OPENS DOORS FOR HANDS-ON LEARNING FOR CASNR STUDENTS

Janet McKinley, second from left, rode with institute leaders and Mark Wilson, regional vice president of Farm Credit Services, second from right, at the 2013 National Championship for field trialing bird dogs. The event is held each winter at Ames Plantation in southwest Tennessee.

Colleagues who worked with Janet McKinley in her 28-year career at BellSouth may be surprised to learn that the executive is a farm girl at heart.

“I love the farm. I’m an outdoors person,” says the retired chief corporate auditor. McKinley, a 1980 graduate of UT’s College of Business Administration, got her first taste of farm living in 1972 when her family moved from Nashville to a 100-acre farm in Spring Hill, Tenn.

Promoting Hands-on Learning and Serving Our Communities

The institute prepares its graduates to excel in a fast-changing society. Its commitment to communities is to increase access to the university’s resources and programs.
Her father, Bob, a 1948 graduate of UT Knoxville, and her mother, Barbara, soon made a name for the family as breeders of championship Tennessee walking horses and Hereford cattle. The McKinleys typically had around six or seven walking horse broodmares, along with weanlings and yearlings, on their farm.

“I grew up (on the farm) and helped my parents with the horses. We’d show them every Friday and Saturday in the summer,” says McKinley. She dreamed of being a veterinarian, but realized it wasn’t the career for her during a high school event for pre-med students.

“While watching an operation I realized I had a low threshold for pain and didn’t like the sight of blood!” McKinley recalls. Instead, she followed in her father’s footsteps to major in accounting at UT. “It was a better route for me.”

McKinley says UT Extension and the Middle Tennessee AgResearch and Education Center were integral parts of farm life for her family and the Spring Hill community.

“My parents always looked to Extension for help in running the farm,” she says. “(It) was always there to answer questions and provide help.”

And Bob McKinley, now 93, cites the value of the center, a unit of UT AgResearch. “The center offers great training and research in agriculture. We’re impressed by them because of the dedicated people they have and their contribution to the community. We are lucky to have the center here.”

McKinley, chair of UT’s Development Council, says the range of services provided by the institute wowed her. “I’ve always known about Spring Hill (center) because I grew up here, but whether through 4-H or Extension or what goes on at the vet school … it’s just amazing how far reaching it is.”

After learning about the institute’s goal to offer its students more hands-on experience, McKinley decided to help fund that mission while also honoring her parents.

“Janet’s not a UTIA alum, but she heard me talk about what we’re doing in our communities and asked how she could help,” says Chancellor Larry Arrington.

The Bob and Barbara McKinley Student Enrichment Endowment provides for hands-on learning at Spring Hill for students in the College of Agricultural Sciences and Natural Resources. McKinley Scholars will have opportunities to join in AgResearch and educational events, agricultural production and more.

“There’s nothing better than to get that kind of hands-on experience,” says McKinley. “And the beauty is you can take what you learned in the field and bring it back to the classroom environment.”

And if those scholars have a chance to visit the McKinley farm, they better bring their boots.

“My parents may put them to work!” McKinley laughs. – Melanie Edwards
Serving Our Communities
The institute is committed to using its resources to address the unique needs and issues of specific communities.

Reviving a river

For eight decades, the Pigeon River, which flows from the mountains of North Carolina down through the foothills into Tennessee, was a lesson in what to do wrong to a waterway.

A paper mill in Canton, N.C., released immeasurable quantities of dyes and toxic pollutants into the river. The chemicals reduced the number of aquatic organisms in the waterway from an estimated 95 species to the teens. The river was nearly barren of life.

Since 2001, though, the Pigeon has become a lesson in what to do right.

Fisheries biologists in the institute’s Department of Forestry, Wildlife and Fisheries took the lead that year in a multipartner effort to revive the river. The scientists have introduced 20 species to the river with nine reproducing and six establishing populations. Thousands of fish have been released. Each summer, surveys are conducted to see how they are doing, with team members seining, electroshocking and snorkeling along stretches of the river. The scientists’ approach in the dramatic turnaround has won a national award and become a model for stream recovery across the U.S.

“It’s been a great experiment for us,” says Joyce Coombs. “You hear about the perfect storm. Well, when water quality experts, fisheries biologists and environmentalists came together as partners on this, it was just at the perfect moment for the river and for everyone to pool their talent and time.” Coombs (M.S. wildlife and fisheries science, ’03) came on board as a master’s student, doing her thesis on the river. Today she coordinates involvement on the project.

What created the opportunity were a change in ownership of the mill and technological
improvements to its operations. The Environmental Protection Agency and state of Tennessee also had a hand, the latter through the 1977 Tennessee Water Control Act. This act mandated that pollution to waterways must stop and that polluted rivers be cleaned up. The law said Tennesseans have a right to clean water.

Following changes to the mill, water quality began steadily improving, but it wasn’t clear if the river could support life. Scientists decided to give it a go. They introduced snails to the river. The snails survived. Next they tried a snail species more sensitive to water quality. Those survived. The signs were promising. Scientists then selected another river in the same watershed and with similar characteristics to the Pigeon. Using the Little River as a reference stream, they identified organisms that likely lived in the Pigeon before the environmental devastation. It was time to try introducing them.

“What’s amazing about the recovery is that it has cost so little money. We collected species from other waterways, tagged them and then released them into the Pigeon,” says Larry Wilson, who has overseen the effort since its inception. “We and our partners have invested time and very little else. The mill also has been a partner, supporting Joyce’s work since 2003.”

The Pigeon River Recovery Project represents the efforts of 16 agencies, a wide-ranging alliance that includes AmeriCorps volunteers. Even local schoolchildren have had a hand.

“What think of the river as a Christmas tree with no needles and with toxins coming down from the star into the trunk,” Wilson says. “We found that game fish had migrated up the tributaries of the water system, up the tree’s branches to safer waters. As the Pigeon’s water cleared up, they returned to the river. But what was missing were the smaller species that serve as food sources for the bigger fish. That’s what we’ve been focusing on establishing.”

And the introductions have had amazing survival rates. In 2010, the remnants of three hurricanes came through the watershed, resulting in a 100-year flood followed by a 500-year one. The team had just released three species of shiners. “We thought, they’re gone,” Wilson says. “It was weeks before we could get back in there, but the fish were there. They had survived in place. They’re so small, they took refuge behind boulders. It was just incredible they were still there.”

Now the team is preparing for this year’s season of releases. “We’ve looked at what we’ve done so far and what we’ve found so far,” Wilson says. “We’ve done the easiest fish, now it’s time to move on to ones that aren’t close by or are not found in large quantities. One of the newest aquatic species to be reintroduced is the freshwater mussel. They have a place in the river, too.”

The Pigeon River’s recovery is a lesson for everyone about what can be achieved when industry, governmental agencies and university scientists come together. Their efforts on the Pigeon are scheduled to continue through 2015. Wilson, who is retiring this spring, plans to stay on to see the project through to its end. – Margot Emery
The challenge is getting one’s arms around even a small part of ‘agriculture,’ and that is what we are trying to do. The whole notion of agriculture is incredibly and wonderfully complex. American Gothic we ain’t.

Top left: Named for the storied Mallet Ranch of the 1800-1900s, the Mallet Event Center and Arena in Levelland, Texas, is the cultural heart for the 22,000 people who live in this West Texas community. Forkner counts it among his favorite projects.

Top right: The Buchanan Agricultural Business Expo Center in St. Joseph, Mo., represents the emerging model for agricultural exposition facilities. The overall strategy is to have a commerce park for hotels, restaurant and specialty shopping; a commodities park with agricultural trade and support offices; and an exhibition component with an expo building, show arena and multipurpose livestock pavilions. The first two parks pay rent to offset the third. “So we want to bring clients to our park, feed’um, sleep’um, educate’um and sell’um at one spot,” Forkner says. “It’s to be an international destination.”

Bottom left: Populous-designed Reliant Stadium is home to the iconic Houston Livestock Show and Rodeo. Last year, the three-week event drew more than 2.2 million.
Serving communities, celebrating lives

ALUM CREATES FAIRGROUND, EXPO FACILITIES AROUND THE WORLD

Fairgrounds hold special places in most people’s hearts. Cherished for the way they bring people together, fairs encourage youth and celebrate agricultural heritage, family values and individual life skills.

Whether local or larger in scope, fairs have histories that stretch back centuries. One is mentioned in the Old Testament in Ezekiel 27:12. America’s roots run pretty deep, as well. The nation’s first fair dates back to 1810 in Pittsfield, Mass., when author and agriculturalist Elkanah Watson wanted to see who had the best sheep. Watson’s fair continues to this day.

Alumnus David Forkner is mindful of fair traditions as he designs and plans new and expanded fairgrounds, equestrian complexes, exhibition buildings, arenas and event centers around the world.

As a principal and senior planner in the global design firm, Populous, Forkner has had a hand in more than 250 projects. His portfolio includes 80 percent of recent fair and ag expo center planning and construction projects in the U.S. and increasing presences in the world market. His projects range from the small Lincoln County Fair and Smokey Bear Stampede in rural New Mexico to the supersized Houston Livestock Show and Rodeo, the largest event of its kind in North America. Other notables include the Calgary Stampede, Alaska State Fair, National Western Stock Show in Denver and the Sydney Royal Easter Show, the largest ag event in the Southern Hemisphere. Collectively, these facilities have an annual attendance of more than 5.5 million people.

Forkner says a convoluted career path led him to his vocation. After graduating with a B.S. in horticulture in 1966, he earned advanced degrees in planning and landscape architecture and studied architecture in Italy. He’s been a community organizer, taught design at two universities, served as senior planner for two high-growth communities and as a planner for the 1982 World’s Fair in Knoxville.

Over the past 35 years, all of those elements have come together in Forkner’s work. “It’s not so much the design of award-winning facilities that is important to me, but rather the social, cultural and economic impacts they have in their communities. And, of course, showcasing agriculture.”

A good example is the recently constructed Mallet Event Center and Arena in Texas. The facility is the social and cultural center for a county of 22,000 people in the rural, western Texas. Among the events the complex hosts are an annual junior livestock show and sale, professional and ranch rodeos, horse and livestock shows, wedding, banquets, family reunions, concerts, and even high school graduations.

Above all, fairgrounds are cultural institutions, Forkner says. “They’re about preserving the traditions of their communities and even creating new ones. That makes being involved in these facilities endlessly rewarding for me. I can’t imagine doing anything else and being as happy.”

– Margot Emery

The great education I received at the Institute of Agriculture led in large part to my present position planning and designing agricultural centers, fairgrounds and equestrian facilities.
Graduate Jerri Marr exemplifies the institute’s pillars of academic excellence, hands-on learning and community service. Her story is a road map of the paths the institute creates for its students and the skills it gives them to succeed in life.

Supporting three pillars

Trial by fire

ALUMNA JERRI MARR FORGED COMMUNITY PARTNERSHIPS TO OVERCOME EPIC WALDO FIRE

“Waldo is the kind of fire that you study about, talk about and hope that you never have.”

Last June when the Waldo Canyon Fire exploded into drought-stricken Colorado, alumna Jerri Marr found herself at the center of an unfolding nightmare.

As U.S. Forest Service supervisor of the Pike and San Isabel national forests and Cimarron and Comanche national grasslands, Marr (B.S. forestry and natural resource management, ’92) was at the center of efforts to contain the fire and coordinate community response. It was Marr who was the visible presence of leadership combating the fire, leading multiple daily news briefings followed avidly by citizens overwhelmed by the threats overtaking their lives.

“There were communities and values at risk in any direction that the fire chose to burn, and the fire chose to burn in four directions in four days,” Marr says. “We had to put it out.” And that took her coordination of growing networks of firefighters, police, military, local and state governments, volunteers, and even the communities themselves.

As the wildfire grew, it forced the evacuations of 33,000 residents in three towns, along with a partial evacuation of the U.S. Air Force
Academy. In all, 346 homes were destroyed, 71 damaged and a major artery, U.S. Highway 24, had to be closed in both directions. To terrified citizens, it was Marr who offered reason and calm amid a mounting crisis.

“I don’t think about fear when I’m working,” Marr told The Denver Post. “I think about how I can get the job done. When you get all emotionally engaged and involved, it’s hard to be sharp. And for me, staying sharp is staying calm.” Her calm sustained communities.

On July 10, 18 days after it ignited, the fire was contained. It had devastated 29 square miles, an area expected to take decades to recover.

“The time to build partnerships is before a crisis occurs,” Marr says, “but I had only been in office for a little over a year when the fire occurred. So it was like speed dating. I had to quickly formulate the relationships in the community because we were going to be in this together and we needed to figure out how to work together — and it worked. As evidence of that success, we remain strong partners today.”

Now a year out from Waldo, Marr says she concentrates on the job she was hired to do. “I have almost 3.5 million acres that I manage in two states, hundreds of employees, and we have lots of big issues such as the wildland and urban interface, restoration and more. I’m looking for the next issue that I’m going to be facing, wherever that is.”

AN UNLIKELY START

Growing up in urban Memphis, Marr had an unlikely start to become a forest service line officer. Her entry into natural resources occurred through 4-H. “I became involved in elementary school. 4-H offered me many opportunities. I particularly liked its leadership component.”

During her senior year, she and a small team of 4-H’ers took part in a 4-H leadership camp. Their assignment was to describe a day in a life of an agricultural Extension agent. Marr took the lead of her group, writing a play and sketching out roles for everyone. The team’s project was judged the best, and soon team members were touring the state presenting their skit. At a national meeting of land-grant universities in Gatlinburg, Tenn., she riveted the attention of former institute deans Glenn Hall and Gary Schneider. Learning from Marr’s 4-H agent, Larry Darnell, that she had an interest in natural resources, they offered her a scholarship on the spot.

“That meant so much to me. Unlike my brothers and sisters, I didn’t have a 4.0 average. I wondered if that meant I’d have to compromise on my education. But the scholarship offered me everything that I dreamed.”

The award came with an internship. Two weeks after her high school graduation, she found herself in Chiloquin, Ore., and her 28-year career with the U.S. Forest Service began. But it wasn’t all smooth sailing.

“At UT, I became too much involved in extracurricular activities, my grades suffered and I lost my scholarship,” Marr recounts. “But I was determined to persevere. I realized I needed to get focused, so I dropped all extracurricular activities except a program called Young Life, because it was the one activity that allowed me to give back while I was in school. And it was there that I met Bill and Crissy Haslam, now governor and first lady of Tennessee.

“They needed a baby sitter, and I needed a place to live, and it was just a great match,” Marr says. “They’re incredible people who loved on me and cared about me and poured into my life at a time when I really needed that.”

Marr says the institute did, too. “People believed in me and gave me opportunities. And because of that, as I go through life now, I’m always looking for a way to give folks a hand when they need it.”

PAYING IT FORWARD

At a professional conference last year, Marr learned that Dominique Patrick, ’13, was seeking a summer learning experience. “When I found out that a UT student was among those we were considering, I really talked with her adviser and said I’d love to pick up some students from my alma mater.”

“Knowing that a UT student was among our summer hires really made me smile because I look back and remember somebody gave me the opportunity,” Marr says. “I tell people my story is really somebody else’s story, and that’s why I have a lifelong value in giving a hand up, just as I received, whenever I have the opportunity.” – Margot Emery

The Department of Forestry, Wildlife and Fisheries, which educated Marr, will celebrate its 50th anniversary in 2014.
Delivering Discoveries
Institute scientists generate technologies and facilitate their transfer to society.

Back to school for new faculty

2012-13 PARTICIPANTS AND THEIR RESEARCH INTERESTS:

Darren Baker – carbon fiber production

Chris Boyer – farm management and production and resource economics

Edward Yu – marketing and logistics

Faith Critzer – food microbiology and safety

Irene Hanning – food microbiology

Sharon Jean-Philippe – urban forestry

Peter Krawczel – dairy

Justin Rhinehart – beef

Charlie Kwit – disturbance ecology and genetic flow

Hem Bhandari – bioenergy crops and feedstocks

David Verbree – crop physiology and agronomy

Andrea Ludwig – watershed science and management

Jennifer DeBruyn – environmental microbiology

Sean Schaffer – biogeochemistry

Rebecca Trout-Fryxell – medical and veterinary entomology

Heather Young-Kelly – field crops disease management
New faculty members are eager to help students learn and aid people from all segments of society. Their visions include better health and nutrition, safer and more affordable food and fiber, and more pristine natural environments. Each faculty member is expected to contribute unique expertise to help the institute achieve its lofty land-grant charge to better society. But what comes after they receive business cards, a computer, and an office or lab to call their own?

Many are going back to school.

Well, not exactly back to class. These scientists are participating in a new program provided through UT AgResearch that teaches them how to become successful members of the UTIA community. Called the UT AgResearch Faculty Development Fellows Program, the effort helps orient new faculty and assists them in developing successful careers by increasing their competitiveness in obtaining extramural funding.

“We designed the fellows program to help new faculty understand the roles and responsibilities of a tenure-track faculty member and to enhance their proposal development skills,” says Steve Oliver, assistant dean of UT AgResearch, who has garnered several million dollars in funding for mastitis and food safety research. “For UTIA and individual faculty to be successful, they have to be grant-competitive.”

Larry Arrington, UTIA chancellor, has praised faculty and staff for achieving amazing results in research funding. In fact, 2012 was a record year for external funding in support of research, Extension and teaching programs. “Total UTIA grant awards for 2012 exceeded $54 million,” Arrington says. While this figure reflects a tremendous effort — more than 600 grant applications were submitted in 2012 — Arrington believes UTIA can do better, but he agrees with UT AgResearch Dean Bill Brown’s assessment of the final goal: “It is not about the money, it is about what the money allows us to do in service to Tennessee,” says Brown.

It’s also about faculty satisfaction, says Oliver. “The Fellows Program is intended to help our scientists grow as researchers and teachers, and give them the tools and connections they need to launch into dynamic careers.”

The Fellows Program includes a combination of learning activities and mentoring. Monthly sessions address issues like policies, procedures, facilities and expectations. A mentoring experience pairs each participant with a senior scientist who has developed a strong research program and has a track record of securing external grant funding. In addition, staff from the UTIA Office of Sponsored Programs advise fellows about grant proposal development and submission. UTIA also provides the services of an external consultant to review final proposals and will sponsor travel for fellows to visit appropriate federal funding agencies and workshops as needed. Fellows are expected to submit an application to an external funding agency by the end of the program.

Sixteen fellows took advantage of the inaugural program. Among them are Justin Rhinehart and Peter Krawczel of Animal Science. Both credit the program with helping them get to know others in UTIA. “It [the program] has created great networking with scientists from other departments that will undoubtedly lead to multidisciplinary research efforts,” Rhinehart says.

Chris Boyer with Agricultural and Resource Economics says the program’s goals are spot-on in meeting the needs of new faculty. “This program will substantially reduce the time it takes for new faculty members to ‘learn’ how to write a competitive grant proposal, and allows us to develop more competitive grant proposals earlier in our career. This will be a major factor in enhancing UTIA as well as our individual success,” he says.

Faith Critzer, of Food Science and Technology, summarized sentiments regarding facilities: “It has given me a real feel for how many resources we have at our disposal to assist with our research interests. Knowing about all the research and education centers and their capabilities as well as personnel really assists you when you’re trying to design a study,” she says.

Sean Schaffer with Biosystems Engineering and Soil Science took to heart the free career advice. “It has been an eye-opening experience to hear from faculty members, young and old, about the good and the bad that come with this career path,” he notes.

The 2013-14 program will begin accepting applications in later this year.

“The AgFellows program is about helping our new scientists find their feet and opening their eyes to opportunities to commercialize the technologies they develop. Ultimately it’s about delivering new technologies and inventions to Tennesseans.”

– Bill Brown, dean of UT AgResearch
TOMMY BURCH

Tommy Burch came to UT in 1961 to study dairy manufacturing in the Dairy Department. He’s forthright about what he studied: “I studied dairy manufacturing.” That included supporting chemistry and mathematics courses and, rounding out his education, were two years of mandatory military science and physical education. Classes on the ag campus ended at 25 till the hour; classes on the main campus started at the top of the hour. It was a mad scramble, Burch says, to be on time for both. On the ag campus, classes also met on Saturday mornings.

Burch learned his dairy processing lessons well. Following graduation in 1966, he worked 10 years for Sealtest in Nashville, then 10 years in Knoxville for Flav-o-rich. In 1984, he signed on as director of the long-running UT Creamery.

Located beside McCord in what is now called the Food Safety and Processing Building, the Creamery was a source of training and employment for students. It produced dairy products for the entire campus system — from student cafeterias to the UT Hospital and 30 vending machines. Butter and milk (whole, 2 percent and skim) were among its products, along with buttermilk, cottage and cheddar cheese, yogurt, and ice cream. In all, there were 10 flavors of ice cream, including butter pecan, pistachio and black raspberry, the favorite of the Faculty Club. The Creamery also furnished UT athletes with reconstituted Gatorade and a chocolate energy drink. There were three delivery trucks during Burch’s time, and the milk that supplied its operations came from Jersey and Holstein cows at the UT Dairy. “Our butter was highly valued,” he notes.

Burch says managing the Creamery kept him busy, sometimes working from 6 a.m. to 6 p.m., “but it was fun. It was something you could enjoy doing.”

The Creamery’s roots reach back to the early 1920s or even a few years earlier when processing equipment and sales occupied the back wing of Morgan Hall. When its new building opened in the late ’40s or early ’50s, the Creamery was the most modern dairy processing plant in the entire state. During the 1980s, though, changes in the dairy industry and shifts in societal needs led the small-scale UT Creamery to close its doors, ceasing operation in 1989. Burch continued on as manager of the pilot plant for the Department of Food Science and Technology before retiring in 2010. The pilot plant continues to this day to give students hands-on experience in making cheese and ice cream, among other products.
When Saundra Campbell began her studies in 1988, she knew what she wanted to study — agricultural communication — but there wasn’t a major for it nor a clear college to choose. So she took her idea to John Todd, longtime professor of agricultural and Extension education and someone she knew through FFA, and a custom-made curriculum was born.

Campbell says she soon knew she made the right decision. “The ag ed program was more than a curriculum, you were part of the ag ed family. Dr. Todd and his wife Sue made sure to welcome all students into the program and hosted many events, like cookouts and volleyball games, to really make everyone feel a part of something bigger.”

In addition, Campbell says that Todd found opportunities for students to gain experiences that would help them in their career. In Campbell’s case, he found an internship with the National FFA Organization.

During her time on campus, the College of Agriculture changed its name to the College of Agricultural Sciences and Natural Resources. “That was huge!” Campbell says the change reflected an awareness of the many different fields and job opportunities open to students. Retired dean Gary Schneider says at the time the majority of students in the college were pursuing majors that were not directly focused on traditional core degrees, so the change made good sense.

Campbell, who graduated in 1992, says her experiences and tailored curriculum have served her well. Today she manages communication for DuPont Pioneer in 11 states in the company’s Southern business unit based in Huntsville, Ala.
A typical day doesn’t exist for Dr. Gabby Schrader. The ’09 CVM alum is associate zoo veterinarian at Hawaii’s Honolulu Zoo, the realization of a lifelong dream. “As a child, I thought there could be no better job than taking care of animals,” says Schrader. Veterinary medicine perfectly meshes her deep passion for the biological sciences, conservation and health care. While promoting conservation in the animal world through medicine, Schrader also focuses on the One Health Initiative, a concept linking human, animal and environmental health. “The health of a wild animal is linked to the health of people. We don’t fully understand the biology, physiology and medicine of most of the world’s creatures, and zoos help provide the opportunity to learn so we can promote health and conservation in the wild.” Zoos have been instrumental in preventing the extinction of several species, and Schrader’s profession provides constant challenges. “Never a dull moment! One day may be a routine examination of a box turtle and the next day, saving the life of a tiger.” And all in a paradise of a work setting.

Allen King (Ag Education, ’55) farms 4,000 acres of corn, soybeans, cotton and wheat with his two sons near Brownsville in West Tennessee. King took over the family farm in 1961 following the death of his father. “I came home and taught vo-ag at Haywood High School for six years and farmed with my father part time until his death. All I know and all I’ve ever wanted to do is to farm. Agriculture is a challenge.” Serving agriculture and community are priorities. He is the longest-serving county commissioner in the state, having served on the Haywood County Commission since 1956. King chairs the Southeastern Boll Weevil Eradication Program, responsible for virtually eliminating the costly cotton pest. As testament to his achievements, he was named Progressive Farmer Tennessee Farmer of the Year in 2001. King also serves as one of two farming members who represent the institute on the Council for Agricultural Research, Extension and Teaching. King and David Fugate are among representatives from the 50 states, the U.S. territories, and the District of Columbia on the council. They help to advance CARET’s mission to advocate for greater national support and understanding of the land-grant university system’s food and agricultural research, Extension and teaching programs.

Agricultural leadership, education and communications graduate Colleen Cruz, ’11, recently appeared in her signature Cruze Farm Girl apron and cowboy boots in The New York Times, which described her as a “buttermilk ambassador.” She’s also been highlighted by Southern Living, Garden and Gun, and a host of other publications for the way she represents and promotes local-sourced food and the products from her family’s 550-acre dairy farm. Her free spirit has won her fans and friends throughout the region and earned her mention in the Greater Knoxville Business Journal’s 40 under 40 list of achievers. A typical week finds her delivering farm-fresh dairy products to area retailers and chefs and manning a milk bar at Knoxville’s beloved Market Square Farmers Market.

While you say “tomato” and I say “tomahto,” to Dilip Panthee, the fruit will always be Solanum lycopersicum — and there’s good reason for that. It’s Panthee’s job to breed improved ones. Panthee grew up on a small family farm in Nepal with the highest peaks of the Himalayas as a backdrop. Early on, he chose plant breeding as the best way he could advance agriculture. Panthee earned his Ph.D. in plant sciences (’05) studying soybean breeding and genetics in UT AgResearch. Now working for North Carolina State University, he uses molecular markers and traditional breeding techniques to create tomatoes optimized for shape, color, taste and disease resistance. His latest varieties, “Mountain Honey” and “Mountain Vineyard,” are the first grape tomato hybrids with resistance to fusarium wilt and tomato spotted wilt virus. Beefsteaks “Mountain Merit” and “Mountain Majesty” are being grown worldwide. Panthee says, “I enjoy evaluating different colored tomatoes and testing them in the field. Nothing is more entertaining than wrestling with tomato plants in the hot and humid summer days.”

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Advancing all pillars

Megan McMurray Dugan
Associate Director of Alumni Relations and Development for CVM

Dugan builds relationships between the College of Veterinary Medicine and its alumni, students and corporate donors. She connects students with alumni for externships and job opportunities and also helped launch the college’s Alumni Council in 2011.

Michele Sides
Director of Advancement for the Western Region of Tennessee

Sides joined the advancement team in January. Based out of the West Tennessee AgResearch and Education Center in Jackson, Tenn., she says she is able to build close relationships with Mid-Southerners in their own backyard while also identifying the programs most in need of support in that region.

Michele Sides
Director of Advancement for the Western Region of Tennessee

Lindsay Taylor Phillips
Major Gifts Officer for CVM

Taylor Phillips has statewide and regional responsibilities for the College of Veterinary Medicine. Since joining the team in fall 2012, her focus has been on the equine and farm animal industries, working with the owners of patients of the UT Veterinary Medical Center’s Equine and Farm Animal hospitals.

Keith Barber
Vice Chancellor of Institutional Advancement

Barber took the reins of the advancement team in July 2012. “The members of the advancement team are professionals who are passionate about agriculture and natural resources and about helping others. We facilitate partnerships for the advancement of UTIA,” he says. Barber brings with him to UTIA experiences gleaned as a leader at land-grant universities across the South.

Claire Eldridge
Director of Development for the College of Veterinary Medicine

Eldridge oversees fundraising for the College of Veterinary Medicine. Under her direction, the development office partners with alumni and friends to fund improved facilities, student scholarships and endowed professorships.

Megan McMurray Dugan
Associate Director of Alumni Relations and Development for CVM

Dugan builds relationships between the College of Veterinary Medicine and its alumni, students and corporate donors. She connects students with alumni for externships and job opportunities and also helped launch the college’s Alumni Council in 2011.
For more than 50 years, the UT Institute of Agriculture has partnered with alumni and friends to assist students, support faculty, and create and sustain its teaching, research and outreach programs. This approach to funding began with E. J. Chapman, former superintendent of the Middle Tennessee AgResearch and Education Center. Chapman recognized that the institute’s mission could be bolstered through private giving, and so he traveled across Tennessee, securing estate gifts to endow an undergraduate scholarship program.

Following in Chapman’s footsteps were such UTIA leaders as Bob Pentecost and Buddy Mitchell, who were instrumental in attracting private gifts and expanding the role of alumni relations at the institute. Through their efforts, thousands have given of their time, talents and financial resources to support the institute. And their efforts continue to benefit UTIA today. Keith Barber, appointed as vice chancellor to lead the unit in July 2012, sees the impacts. “Today we stand on the shoulders of those donors and institutional leaders who had the vision to invest in the institute in order to help others.”

And with an eye to the future, Barber has renamed UTIA’s fundraising program. Rather than the Development Office, the program is now the Office of Institutional Advancement. “This more readily reflects our role for the institute,” Barber says. “We consider ‘friend raising’ just as important as fundraising.”

The advancement team also has been restructured to reflect today’s needs, adding three members across the state.

Barber says he and his team are aiming high, with the goal to build on the momentum of the successful Campaign for Tennessee, which ended in 2011 and raised more than $114 million for UTIA. “Our success today stems from the great work done over time by our faculty, students, and engaged alumni and friends,” Barber said. “As an institute, we must maintain these high standards of excellence while creating new opportunities for service as we have occasion.”

– Melanie Edwards

### Advancing the Institute

**RAISING FRIENDS, FUNDS TO SUPPORT TEACHING, RESEARCH AND OUTREACH**

**Tiffany Howard**

**Director of Advancement for the Central Region of Tennessee**

Howard joined the advancement team in January. She gathers private support for initiatives to benefit the students, faculty and staff of the institute as well as the region’s farmers. Her office is at the Middle Tennessee AgResearch and Education Center in Spring Hill, Tenn.

**Ryan Hensley**

**Executive Director of the Tennessee 4-H Club Foundation Inc.**

Hensley has led 4-H’s fundraising efforts since January 2012. Hensley, who was active in 4-H in his youth, hopes to double the 4-H Foundation’s endowment in the next four to five years with support from 4-H alumni around Tennessee.

**Donna Eason-Pile**

**Director of Annual Giving and Donor Relations**

Eason-Pile is responsible for the institute’s stewardship programs and annual giving operations. She joined UTIA in 2010 as assistant development director for UT Extension.

**Dennis Jones**

**Director of Planned Giving**

Jones guides friends and alumni of the institute in estate planning and bequests to support UTIA and 4-H. Jones is the father of 4-H members and has served as a Knox County 4-H volunteer.
AG DAY 2013

Mark your calendars for Ag Day!

OCT. 5, 2013 • UT VS. GEORGIA

Ag Day festivities start four hours before the Vols take on the Georgia Bulldogs, in Neyland Stadium. Kickoff time TBA.

RESPONSIBILITY MATTERS

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