2011 – 2012 Annual Report

SOLUTIONS

The University of Tennessee Institute of Agriculture
Dear friends:

I am pleased to share with you this year’s successes and impacts of the University of Tennessee Institute of Agriculture. This report is extra special to me in that it marks the 150th anniversary of the Morrill Act and my first year with the institute.

As you read this report, you will see how our programs today carry out the land-grant mission of the Morrill Act — teaching, research and outreach — by providing solutions for clientele, students, Tennessee and the world. This being the 150th anniversary makes what we do even more important.

The College of Agricultural Sciences and Natural Resources has grown its undergraduate enrollment by 27 percent over the past five years, and it has awarded nearly $1 million in scholarships this year alone. Our research-based solutions have resulted in a new disease-resistant soybean line for producers and the industry. And our outreach is expanding worldwide with our growing international ties in Croatia through Extension and our veterinary medicine diagnostic laboratory service.

The institute’s phenomenal success in the Campaign for Tennessee will enable us to enhance and expand our programs even more.

These are just a few of our accomplishments of the year, and behind all these solutions are our great people. It’s the hard work and dedication of our faculty and staff that make the UT Institute of Agriculture a place that is achieving the land-grant mission and effectively serving the citizens of the state of Tennessee and beyond.

Sincerely,

Larry R. Arrington
Chancellor
UT AgResearch and USDA Release New Soybean Line

The U. S. Department of  Agriculture and the UT Soybean Breeding Pro-
gram have released a new soybean germplasm line that is resistant to multi-
ple pathogens common to the Midsouth. It also exhibits high yield potential.
The new line, JTN-5203, will be useful for providing resistance to soybean
cyst nematode populations, reniform nematodes and fungal diseases, while
maintaining very high yields. It is a maturity
group V, determinate soybean.

Over the past 10 years, the UT Soybean Breeding
Program has developed multiple new soybean
lines with increased yields and improved resis-
tance to soybean cyst nematode, stem canker
and other devastating diseases. The unbiased
yield data provided by the UT Soybean Variety
Trials has enabled producers to make informed
decisions when it’s time to purchase seed. The
program has helped combat the growing (and
costly) problem of  glyphosate-resistant weeds by
seeking out sustainable solutions.

Soybeans are grown on more than 1 million
acres in Tennessee and are the largest row crop
in the state.

VolVet Portal Provides Real-time Patient Information
for Referring Vets

Referring veterinarians are integral members of veterinary medical teams
formed to serve patients of  the UT Veterinary Medical Center. In an effort
to enhance this partnership, the center has created the VolVet Portal, a gate-
way into the patient information system that provides confidential, real-time
information on the status of  patients. The portal also provides immediate
access to test results from samples sent to the Diagnostic Laboratories by
referring veterinarians.

To make referring veterinarians’ jobs easier by improving access to quality
diagnostic laboratories, the Veterinary Medical Center has created a low-
cost courier service that collects lab samples from regional clinics Monday
through Saturday. After samples are processed, results are entered into the Veterinary Medical Center’s electronic data system. Through the VolVet Portal, referring veterinarians can access lab results on their computers anytime day or night. Previous lab values are archived to provide a comprehensive overview of changes to each patient’s lab values over time. The veterinarian can then determine the most effective treatment plan for his or her patients. Services are customized to meet an individual veterinarian’s needs.

Plant and Pest App for Professionals and Home Gardeners

Experts from the institute and six other universities developed the IPMPro mobile app for professionals who need to get pest, plant disease, and plant care information while they are in the field. The IPMPro app also sends alerts on timely pest and plant issues tailored to users’ locations so they will know what pests are emerging and when it’s the best time to prune. Amy Fulcher, assistant professor in the Department of Plant Sciences, was the lead developer working with others at Clemson University, the University of Georgia, the University of Kentucky, the University of Maryland, North Carolina State University and Virginia Polytechnic Institute. IPMLite has now been released for the home gardener. Both IPMPro and IPMLite are available through Apple (iPhone and iPad) and Android marketplaces.

http://tiny.utk.edu/mobile-app
Meeting Online Learning Demands

More and more people are proactively seeking online learning opportunities, and the Institute of Agriculture’s clientele are no different.

To meet that growing demand, several online programs are now being offered to the general public via two websites. The UT Extension Online Learning (extOL) Certifications site makes it much easier and more convenient for Tennesseans to meet the required state certification guidelines in areas such as domestic kitchen safety.

On the extOL People site, a number of free online programs help clientele manage personal finances, feed families more nutritiously, and deal with money issues during and after a divorce. This site also caters to institute-specific audiences, such as 4-H youth getting certified in animal show quality assurance.

ExtOL has become an incredible outreach tool for the Institute of Agriculture, extending our reach to audiences around the state — and the world!

4-H Lodge at Greeneville

Thanks to the generosity of anonymous donors, the Clyde Austin 4-H Center opened a new 4-H Lodge at Greeneville in April. The lodge was built with a donation of more than $1 million from generous supporters.

The lodge is a 13,000-square-foot, two-level facility that includes a large meeting room with a stone fireplace and large windows that overlook the countryside. The building also includes a smaller conference room, 16 rooms to be used for housing, a large deck that overlooks the Unaka Mountains and a smaller deck below. Other features include state-of-the-art electronics and WiFi access, as well as kitchen facilities. The lodge will be used by campers and camp counselors through the summer months, but it is also available any time of year for corporate retreats and organizational gatherings.
Farm Credit Services Scholarships Bring Best and Brightest Students

Farm Credit Services of Mid-America created a scholars program within the College of Agricultural Sciences and Natural Resources. Each academic year, five Farm Credit Scholars will be selected to participate in specially designed coursework, an international experience, mentoring opportunities and an internship. The goal of the program is to enhance the learning experience of students and to prepare them for careers in agribusiness or agricultural production. Dr. John Riley, professor and coordinator of the Agricultural and Resource Economics undergraduate internship program, is the faculty administrator of the Farm Credit Scholars program. The first group of Farm Credit Scholars includes (pictured left to right) Forrest Duncan, a freshman from Decherd, Tenn., majoring in food and agricultural business; Ashlee Ailshie, a junior from Columbia, Tenn., majoring in food and agricultural business; Peyton Graham, a junior from Munford, Tenn., majoring in food and agricultural business; Erin Brinkley, a sophomore from Gray, Tenn., majoring in agricultural education; and Billy Rochelle, a freshman from Nunnelly, Tenn., majoring in food and agricultural business. Riley is pictured far right.
CASNR Awards Nearly $1 Million in Scholarships to Undergraduates

The College of Agricultural Sciences and Natural Resources’ scholarships come from a range of sources. Most are provided by annual earnings from endowments. The gifts range from small, one-time scholarships to endowed scholarships that provide funds on a perpetual basis. During fiscal year 2012, CASNR awarded $950,000 in scholarships to 549 students, or nearly 50 percent of the college’s undergraduates. In 2011, for the first time, CASNR awarded $1 million in scholarships.

Organic Land Grant Assessment Gives Institute Top Score

The Organic Farming Research Foundation has ranked the institute’s Organic and Sustainable Crop Production program as one of the top six organic programs in the country.

Universities were scored in the 2012 Organic Land Grant Assessment, with six receiving the full eight points possible. UT is the newest addition to this assessment, yet still received top honors, joining Colorado State University, Fort Collins; University of Minnesota, St. Paul; University of Florida, Gainesville; Michigan State University, East Lansing; and Washington State University, Pullman.

Each university was scored based on organic research, Extension and education.

CASNR students in the program receive hands-on organic production experience.
Justin Kramer was the first student in the university’s history to graduate with a concentration in construction science. The program, launched in 2010 in the Department of Biosystems Engineering and Soil Science, prepares students for the management side of the construction industry. The curriculum offers a multidisciplinary background with courses from within the colleges of Agricultural Sciences and Natural Resources, Arts and Sciences, and Business Administration. The concentration equips students for careers in construction management in residential, agricultural, commercial, paving and excavation construction areas. Kramer graduated in the spring with a Bachelor of Science in environmental and soil science with a concentration in construction science. The business-related course work earned him a business administration minor and the skills to start his own construction company.
SOLUTIONS for TENNESSEE life
Obesity Research Center Tackles State’s Problem With Overweight

Combating Tennessee’s obesity rate and that of the nation was on the agenda when the institute hosted participants gathered for the Tennessee Obesity Task Force conference. The institute’s Obesity Research Center hosted the conference to share information on activities happening in East Tennessee and provide examples of programs that could serve as models for potential implementation elsewhere in the state. The conference participants’ ultimate goal was to share research, outreach and educational information to reduce Tennessee’s rate of obesity.

While the state recently dropped from ranking third in the nation for obesity to eighth, its rate of obesity remains of concern. The Centers for Disease Control and Prevention says 31.7 percent of Tennesseans are obese, compared to 27.6 percent for the U.S. as a whole. For the U.S., the percentage of severely obese (100 pounds heavier than a person’s healthy weight) stands at 6 percent and is expected to rise to 11 percent by 2030.

Presentations highlighted UT collaborative research across more than a dozen departments and units on Knoxville campuses represented in the UT Obesity Research Center. Research expertise includes basic science, as well as clinical and population research, which involves both undergraduate and graduate students. Center members are also testing behavioral interventions to determine effects of energy density, sedentary behaviors and physical activity during TV viewing on energy balance.

EWellness, a UT Extension Web-based program available statewide that promotes a healthy lifestyle, was also a topic of discussion. Participants are organized as teams, and the program guides people in making healthier lifestyle choices. Proven impacts through participation include significant weight loss, decreased glucose level, and increased consumption of fruits and vegetables.
Volunteers Impact Tennessee Life Throughout the State

UT Extension’s Family and Consumer Sciences department was the beneficiary of 350,000 hours of service by the Family Communities and Education Clubs, but Tennesseans were the real winners. The service hours included everything from providing food and clothing for needy families, to collecting school supplies, to raising funds for charitable organizations. The Corporation for National and Community Service estimates the value of a volunteer hour in Tennessee as $21.36. That’s more than $7 million for the 350,000 FCE Club hours.

UT Extension benefits each year from the hard work of caring volunteers. Tennessee 4-H has more than 5,000 adult volunteers statewide, and last year they combined with 4-H youth to perform 247,000 hours of service. Extension’s Master Gardeners worked more than 238,000 hours last year planting flowers and trees in parks, restoring cemeteries and growing “healing” gardens at hospitals.

CT Scanner Offers Latest in Veterinary Diagnostic Capabilities

The UT Veterinary Medical Center installed a 40-channel multidetector CT scanner, putting the center at the forefront of CT imaging. The Veterinary Medical Center is one of only a handful of teaching institutions in the country to possess this cutting-edge technology. The powerful CT scanner offers ultra-fast scan times, resulting in shorter patient anesthesia.

CT greatly augments the Veterinary Medical Center’s board-certified radiologists’ diagnostic accuracy and expands imaging capability to include angiographic studies for the evaluation of portosystemic shunts, thromboembolic disease and other vascular abnormalities. In addition, 3-D reconstructions are potent tools in the pre-operative evaluation of various diseases, especially orthopedic conditions such as complex fractures.
Multidetector CT technology is not only a powerful diagnostic tool, it is an invaluable teaching tool: multiplanar and 3-D reconstructions allow students and practitioners to better comprehend anatomy and the complex relationship of soft tissue, bones and vessels.

**Extension Response Helped Farmers Cope With Historic Drought**

Extension launched an effort to assist the state’s farmers and ranchers as they coped with the historic and unseasonably hot and dry weather — weather that caused crops to wither and turned pastures to dust plots. The impacts were far-reaching, with estimated drastic reductions in harvests, especially in feed available for livestock for the fall.

Through a public website, farmers have direct access online to information that can help them make the critical and sometimes heart-wrenching decisions necessary to keep their operations and families financially viable.

The effort included the institute’s livestock specialists, plant and pest specialists, veterinarians, family science experts, environmental engineers, horticulturists, and forestry and wildlife experts from across the state.

In addition to the online resources, Extension coordinated a series of livestock producer meetings to assist with the increasing dire situation of the state’s forage and pastures. Two meeting were held in each grand division of the state.
Growing International Ties

A recent delegation who visited the institute from the Agrokor Group is one example of the institute’s growing international ties. Agrokor, Croatia’s largest privately held company, is the leading food industry and retail group in the former Yugoslavia. The company approached UT Extension with the goal of establishing a partnership that benefits both Croatia and Tennessee. A memorandum of understanding is being developed that will establish a partnership in which UT Extension serves as a resource on production agriculture topics, while Agrokor will share its know-how on areas of production and value-added processing with Tennessee.

Other international ties that are being formed include:

» Exchanges of scientists and students in areas of biofuels, wood processing and statistical process control with the University of Salzburg and BOKU University in Vienna, Austria.

» Training in scientific writing and ongoing research on downy mildew with scientists at Germany’s Leibniz University in Hannover and Hohenheim University in Stuttgart. Also training in how to write for Western journals at six universities in China.

» Potential collaboration by the College of Agricultural Sciences and Natural Resources at the Federal University of Manaus in Amazonas, Brazil, that would involve 100,000 of its students participating in international exchanges over the next few years. Partnerships are also being explored with Brazil’s INPA, the equivalent of the USDA.
Opportunities with Chile to develop articulation programs in food safety and agriculture.

Discussions with family-owned Winston Golf of Germany to develop a college or certification program in golf course management and eventually a certificate program for tropical turf managers.

**Center for Renewable Carbon Becomes Lead Center for $15 Million USDA Grant**

The institute’s Center for Renewable Carbon was named by the USDA as a recipient of one of five coordinated agricultural research projects to support the development of sustainable regional bioenergy production systems. In 2010, the USDA Biofuels Strategic Production Report estimated that the Southeast will be the leading U.S. region for biofuels production because of its robust growing season.

The $15 million award, made through a highly competitive process, creates the Southeast Partnership for Integrated Biomass Supply Systems, consisting of a 48-member team of scientists from UT and several collaborating institutions throughout the Southeast.

The team will develop sustainable feedstock production systems for dedicated energy crops, specifically switchgrass and woody biomass. The crops will provide an affordable and reliable supply of biomass with characteristics optimal for conversion to advanced biofuels. The partnership will also incorporate innovative outreach methods to increase public awareness of key aspects of bioenergy, including information generated from new environmental measures designed to equip landowners and community interest groups with metrics for effective decision-making regarding the new biofuels industry.
Partner institutions include North Carolina State University, Auburn University, ArborGen Inc., Ceres Inc. and the University of Georgia. The Center for Bioenergy Sustainability and the BioEnergy Science Center at Oak Ridge National Laboratory are also key partners in the broader research and education program, along with scientists at Tuskegee University, Alabama A&M University and Fort Valley State University. The Integrated Biomass Supply Systems partnership also involves several commercial technology partners, including ClearFuels-Rentech, Louisiana-Pacific Corp., DuPont Biofuels, Tetravitae Biosciences, and KiOR to ensure consideration of appropriate industrial issues.

The Center for Renewable Carbon will receive the $15 million over the course of five years for its contributions to the overall effort.

**Diagnostic Testing Lab Provides Worldwide Service**

Besides meeting the diagnostic needs of local and regional veterinarians, the College of Veterinary Medicine also provides international diagnostic services. Clinicians from around the world use the services of the six diagnostic laboratories within the Veterinary Medical Center, and through the VolVet portal, the international veterinary community has access to real-time information on the results. More than 17 countries have used the service.
Institute Exceeds Goal for Campaign for Tennessee, Raises $113 Million

The institute exceeded its original goal for the Campaign for Tennessee by more than 200 percent. The original goal of $55 million was the expected percentage of gifts that the institute would receive from the $1 billion campaign, based on historical giving to UT. The institute exceeded the $55 million mark early in the campaign and raised the goal to $85 million. In the latter stages of the campaign, the institute exceeded the $85 million mark and completed the campaign with a total of $113,769,691 in gifts received.

Institute programs are better and the institute is empowered for greater success in the days ahead because of the campaign. Faculty positions have been enhanced, more students will receive scholarships and funded enrichment activities, and new programs have been created and existing programs strengthened for greater achievement. There is still work to be done, but the success of the campaign has strengthened the institute’s position for a brighter tomorrow, and these gifts have enhanced programs that serve the people of Tennessee and beyond.

The Institute of Agriculture Campaign Executive Committee consisted of the following Tennesseans: Chairman Charles Wharton of Winchester, Waymon Hickman of Columbia, Ben Kimbrough of Clarksville, Milton Magee of Dyersburg, Myers Parsons of Murfreesboro, Jim Rainey of Gallatin, Jeff Ray of Murfreesboro, Al Samsel of Bean Station, Jim Webb of Cleveland and Steve Williams of Collierville.

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<td>ORIGINAL GOAL: $55,000,000</td>
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<td>RAISED: $113,769,691</td>
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<td>AgResearch</td>
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<td>College of Agricultural Sciences &amp; Natural Resources</td>
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The Institute of Agriculture

The UT Institute of Agriculture engages in off-campus relationships as a part of its normal course of activity — whether it is 4-H youth, owners of animals treated by the Veterinary Medical Center, students who are exceptionally well served and have a close relationship to their professors in the College of Agricultural Sciences and Natural Resources, or agricultural companies and Tennessee farmers with whom the institute is engaged through Extension and AgResearch.

The institute provides teaching, research and outreach through the College of Agricultural Sciences and Natural Resources; the College of Veterinary Medicine, one of only 28 in the country; AgResearch, including its system of 10 research and education centers; and UT Extension with offices in all 95 Tennessee counties and three 4-H centers in East and Middle Tennessee.

The institute employees 2,071 professionals across the state, 203 of which are faculty. The College of Agricultural Sciences and Natural Resources has 1,384 graduate and undergraduate students in eight academic departments, and the College of Veterinary Medicine has an enrollment of 358 students.
FY 2011 and 2012

Income Comparison

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<td>Gifts, Grants and Contracts</td>
<td>27%</td>
<td>29%</td>
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<tr>
<td>Federal</td>
<td>8%</td>
<td>9%</td>
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<tr>
<td>Tuition and Fees</td>
<td>6%</td>
<td>6%</td>
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<tr>
<td>State Appropriations</td>
<td>49%</td>
<td>45%</td>
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<tr>
<td>Sales and Services</td>
<td>10%</td>
<td>11%</td>
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Expenses Comparison

FY 2011
- Restricted Gifts Expenditures: $5.6
- Grants and Contracts Expenditures: $42.6
- Unrestricted Expenditures and Transfers: $122.8

FY 2012
- Restricted Gifts Expenditures: $6.5
- Grants and Contracts Expenditures: $43.4
- Unrestricted Expenditures and Transfers: $126.2

FY 2012

- 29% Gifts, Grants and Contracts
- 9% Federal
- 6% Tuition and Fees
- 45% State Appropriations
- 11% Sales and Services
Clientele Contacts for 2011

Total Contacts 5,458,184

- Extension 5,375,503
- AgResearch 50,000
- College of Veterinary Medicine 32,681

REACH
The UT Institute of Agriculture provides teaching, research and outreach through the College of Agricultural Sciences and Natural Resources, the College of Veterinary Medicine, UT AgResearch, and UT Extension.

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