As a graduate student weighing hogs for a research project at the swine farm, Robert Easter never imagined his career would lead him on an unforgettable journey to become the U of I interim chancellor and vice president.

Looking back on 35 years, Easter doesn’t talk about his scientific breakthroughs in swine feeding practices, his success overseeing a $1.5-billion budget, his appointment by President George W. Bush to the Board for International Food and Agricultural Development, or the long list of awards he has received. Rather, the most rewarding aspects of Easter’s career have been the people.

“Every day was a discovery,” Easter said. “Perhaps the thing that has impressed me the most is the quality of people at Illinois. They do their jobs with integrity, in ways that are sometimes astonishing. You don’t find that in many places. It’s what makes this college great.”

Doug Parrett, professor and associate head of the Department of Animal Sciences, said Easter has made many
contributions to science, but more important, he’s made many contributions to others.

“He’s a leader who brings out the best in others each day,” Parrett said.

**Embracing change**

In 1976, Easter became an animal sciences professor. As agriculture began to change in the 1980s and 1990s, the college’s traditional agricultural student body began to dwindle. Fewer students came to school with plans to return to the family farm. When Easter became department head in 1996, he had to conceptualize how the department would evolve, too.

“Animal sciences had given birth to a number of new disciplines, such as physiology, nutrition, and genetics,” Easter said. “I had to find ways to bridge the needs of agriculture with the scientific discovery that absolutely had to be done to make progress.”

When Easter was promoted in 2002 to dean of the College of ACES, the college had undergone vast restructuring, from 13 administrative units to seven departments.

“Conversations were continuing about ACES’s new core missions when I became dean,” Easter said. “I also had four department head positions to fill in the midst of the first serious reductions in state appropriations and funding. People questioned the role of agricultural experimental stations and extension, and ultimately how both were to be supported.”

Easter said universities are always reformulating and changing.

(Continued on page 24)
Small molecules shed light on cancer therapies

Patients suffering from an aggressive brain cancer will benefit from the results of a study that could advance the development of targeted gene therapies and improve prognosis. Kristin Delfino, a doctoral student in animal sciences with a focus in genetics and bioinformatics, led this study deepening the understanding of the role of microRNAs on glioblastoma multiforme, a deadly brain cancer.

Her team used a novel approach to identify the simultaneous association between tens of thousands of microRNAs, target genes, and glioblastoma progression and survival.

“We looked at the big picture and how microRNAs work together,” Delfino said. “When you look at a single microRNA alone, it can seem significant. But when evaluated in the context of all other microRNAs, some may not be as significant as they appear on their own. The systems biology approach that we implemented is critical for understanding the gene pathways influencing cancer.”

The study confirmed 25 microRNAs previously associated with glioblastoma survival and identified 20 other microRNAs associated with initiation or growth of other cancer types.

“These findings suggest common pathways that can be targeted with similar drugs already developed and tested for other cancers,” said Sandra Rodriguez-Zas, co-researcher and U of I professor of animal sciences and bioinformatics.

Researchers discovered that some microRNA biomarkers of survival are particularly useful for patients of a specific race, gender, or therapy. Other microRNAs are equally effective regardless of the patient’s clinical conditions.

“These biomarkers can serve as the basis to dig deeper into cancer studies,” Delfino said. “Cancer affects us all in one way or another. Unfortunately, we still don’t know how it’s caused, what takes place when it is caused, and how to cure it. However, these biomarkers give us guidance into developing specific gene therapies to target glioblastoma.”

Eric Swenson brings surveillance skills to research

From tracking enemy forces in Iraq to tracking birds in soybean fields—Eric Swenson’s path to becoming an undergrad in Natural Resources and Environmental Sciences may have been nontraditional, but it’s right on target.

Swenson joined the Army immediately after high school and the following year was deployed to Iraq. He served in Ramadi, conducting enemy trend analysis.

“I looked at data from attacks—time of day, location, type—to develop trends by month, season, our holidays, and their holidays in order to predict where and when the next strike might be,” Swenson said.

“That work was actually a really good transition to what I’m doing now, which is exactly the same, only with birds and snakes—which are a lot safer.”

While at the University of Illinois Swenson has had numerous internships and part-time jobs doing lab and field research in his fish and wildlife concentration.

“I’m at the U of I on a GI Bill, but I need to find a job every summer,” he said. “During my first job in the entomology department of the Natural History Survey, my grandfather asked me to help identify a bird on his property that had an unusual growth on its beak. I eventually found Mike Ward, who had been assigned as my advisor. He helped me answer my grandfather’s questions, and I began working with him on his bird research.”

Swenson said he searched soybean fields for nests, marked them with a GPS coordinate and a nearby flag, then returned later to monitor them.

“I learned a lot about basic field practices and techniques. After I graduate, I plan to start a master’s degree. Eventually, I’d like to work for an environmental agency to study waterfowl.”
U of I sophomore helps with teen obesity research

The summer before her junior year in high school, Camille Range learned to love doing scientific research as a participant in RAP, the College of ACES Research Apprentice Program.

Now the Oak Park native is a sophomore dietetics major working in the laboratory of nutrition professor Margarita Teran-Garcia. She is helping with Up Amigos, a project studying the relationships of genetics and social environment to obesity among Mexican teens.

The researchers are trying to determine whether carotenoids—colorful plant pigments found in fruits and vegetables—affect metabolic syndrome, which occurs when a person has three or more factors that add to the risk of developing heart disease and diabetes.

“It’s really important research, because Latinos in Mexico and the United States have high rates of these health conditions, and the incidence only increases after immigration,” Range said.

Range hopes to be able to participate in the U of I Nutrition Symposium this year, which would be a significant accomplishment for an undergraduate.

“I love working with Dr. Teran-Garcia because she understands that I’m a student first. We talk about how much time I’ll be expected to commit each year so that I know I’ll be able to handle both her expectations and my classes,” Range said.

And Teran-Garcia enjoys having students work in her lab. “Their skills and knowledge grow as we invest time in research. As we develop mutual trust, I’m a more effective mentor, and they become more self-driven,” she said.

The researcher asks students to look at the diverse projects that are going on in her lab, find a topic that interests them, and develop a hypothesis that can be tested with the lab’s resources.

“The fascinating part of research is that as soon as we answer one question, we generate two or three more,” Teran-Garcia said.
Sustainability: To Brazil and back

Fazenda Ambiental Fortaleza (roughly translated: The Environmental Fortress Farm) is an organic coffee farm on the northern edge of São Paulo state, Brazil. It is also the setting for a great spring break study-abroad experience offered by the College of ACES. Each year, 10 to 15 students spend the week learning practical lessons in sustainability. They discover that even in a place that could easily be mistaken for paradise, sustainability is vital.

“Farmers in Brazil talk about the same issues as farmers in the United States,” said trip coordinator Dan Anderson. “But being in such a totally foreign setting helps students understand the issues from a new perspective.”

During the course of the week, students explore different coffee production systems and learn how they affect the soil, water, wildlife, and community. Recreation is also built into the trip, with plenty of time for swimming, hiking, and exploring.

“We talk about serious issues, but we also have a lot of fun,” says Anderson. “It is spring break, after all.”

Students also contribute to ongoing research that tracks changes in soil and water quality on the farm. Each year, time is spent with Brazilian university students and neighboring farm families.

In the end, the trip changes the lives and perspectives of the students who go, as is evident from the feedback they give after returning to campus:

“This experience made me feel responsible for something other than myself.”

“Food isn’t just salty or sweet anymore. It defines the lives of thousands of farmers across the world.”

“As I squatted down to catch some water in a big, bright, green leaf, I don’t think I’ve ever felt as close to nature as I did at that moment.”

For more information, contact Anderson at 217-621-7974 or aslan@illinois.edu.

Paulausky gained new perspective in Ireland

It took some nudging from her professors, but eventually Patricia Paulausky used the International Freshman Engineering Scholarship she received in 2010 to fund a semester abroad in 2011, studying at Ireland’s University College Dublin.

Paulausky delayed her semester abroad because she was involved in an ongoing research project. But when her professors found she was in the lab at 11:00 on a Friday night, “they told me I needed to step away from my research and get away from this place for a while,” she said with a laugh.

Paulausky said the semester she spent in Ireland was just what she needed. She traveled extensively around the country and spent two weeks with the family of Eoin White, an Irish exchange student who studied in Paulausky’s home department of Agricultural and Biological Engineering.

In her studies in Dublin, Paulausky worked with a Ph.D. student to develop a literature review on anaerobic digestion of food waste systems and took basic engineering classes.

“It’s a different learning system there,” she said. “There’s no homework, although you might have one or two projects throughout the semester. The final exam counted for about 80 percent of your grade. Because I didn’t have the pressures of homework and midterm exams, I was better able to learn the material. It’s a good system for people who are interested in their work and want to learn,” she continued. “It caters to people who are passionate about what they do.”

Her experience in Ireland has given Paulausky a new, more relaxed, perspective on her work. “U of I is a top engineering school,” she said, “and it’s easy to get caught up in trying to compete. I think Ireland helped me understand it’s really about learning. I know I can succeed and still maintain my sanity.”
Studying Greece’s dairy cows

When Blaine Melody started his education at the University of Illinois, he never dreamed his college career would include studying in Greece—let alone studying dairy cows.

“The best decision I ever made was to choose animal sciences over biology,” Melody said. “And like many, I came to the Department of Animal Sciences with the goal of becoming a small animal veterinarian. However, in my first animal sciences class I realized I had a passion for working with livestock and was good at it. I still love my dog and cat, but I am more interested in a career as a large animal vet.”

Melody’s interest in dairy cattle led him to a unique study-abroad experience at the American Farm School (AFS) in Thessaloniki, Greece. He lived and worked at the school while helping manage a dairy of 120 milking Holsteins.

“My supervisor was the school’s veterinarian and the head of the dairy department,” he said. “I was able to play a part in both running the dairy and performing veterinary tasks.”

Melody learned about managing cattle nutrition and care, milking cows, working in a milk processing plant, and shipping milk. He also gained experience with hoof trimming, vaccine administration, and reproductive management.

“This internship was a great way to put the skills and knowledge I’ve gained through my college education into practice,” he said. “My supervisor was impressed with my level of knowledge in a variety of areas, especially nutrition and reproduction.”

Although AFS interns were asked to put in 10 to 15 hours a week at the dairy farm, Melody found himself working twice as many because he enjoyed the job so much.

“I wasn’t just another worker,” he said. “The staff sought out ways to provide me with new opportunities every day to help me gain a more meaningful experience as an AFS intern and student. What can I say? I’m the kid who works for free. But without these experiences, I wouldn’t be as prepared for my future.”

To read more about Melody’s study-abroad experience, go to afidairyintern.wordpress.com.

Where do hamburgers come from?

To learn about food supply chains, first-year students in a new agricultural economics “discovery course” tracked the journey of a McDonald’s Big Mac.

“Supply chains illustrate the movement and storage of raw materials to a finished product from origin to the point of consumption. We thought, why not have students study the supply chain of something they encounter every day?” said Paul Ellinger, Agricultural and Consumer Economics department head and professor, who teaches the class along with Theresa Miller and Ann Finnegan.

A different team of students followed each of the sandwich’s components: bun and sesame seeds, vegetables, cheese, sauce, and burger patties.

Mitchell Januzic’s group traced the supply chain of the “special sauce” and focused on one main ingredient, soybean oil.

ACES alum George Witchek ’10 gave a presentation to the class about Chicago-based OSI Group, a main supplier of food products to McDonald’s. In addition, each group worked directly with a McDonald’s executive to address issues associated with the supply chain of each of the Big Mac components.

“Mr. Witchek explained that the sauce contains mayonnaise, or a substitute, that doesn’t last forever,” Januzic said. “He stressed that the shipping and arrival is the most important thing.”

Each team’s final presentation covered transportation, handling, and identification of the major companies involved in the food industry.

“A key component in the assignment was for students to explain how McDonald’s assures quality and safety and maintains consistency in its products,” Ellinger said.

Januzic said he didn’t realize how complex one sandwich can be and how many miles the ingredients travel across the globe. “It’s logistically amazing. Food has to move quickly, and everything needs to meet at the store at just the right time to be consumed.”
A new day, a new challenge

As a high school senior, Jack Marshall did not include agriculture in any potential career plan. In fact, he claims he was the farthest thing possible from a “farm kid.” However, when he discovered the opportunities in the College of ACES, he made a new plan.

“Crop sciences graduates have some of the highest placement and starting salaries within ACES,” Marshall said. “I knew with a degree in crop sciences I could find diverse employment opportunities and the promise of a fulfilling career where no two days are alike.”

To test out those opportunities, nearly 80 percent of crop sciences students engage in internships. Marshall credits the University of Illinois for his success as an agricultural biology and technical service intern with BASF, an international chemical company.

“ACES professors teach us real-world practices, like how to work our way through a problem and analyze the situation, instead of flipping through a field guide and looking for a picture,” he said. “My education has been invaluable for my current internship because nothing in real life looks the same as it does in the book.”

During his internship Marshall evaluated, sprayed, and maintained research plots to evaluate the efficacy and crop tolerance of experimental herbicides and fungicides, while researching currently available products to help find new uses.

“I need diversity, both in my education and in my work. No two days were alike in my internship,” he said. “Every day was completely different, and my agenda changed constantly.”

The most rewarding part of his internship was meeting with BASF global leaders of herbicide research, development, and marketing.

“It was amazing to be in a room with some of the most influential people in the industry, let alone be able to talk to them,” Marshall said. “I know I would never have had this opportunity if I didn’t attend the U of I.”

From student to part-time zookeeper

Playing with wolves, feeding pelicans, and applying lip balm to a tenrec were just a few of Kaleigh Albers’s duties while working at the Scovill Children’s Zoo in Decatur.

“My desire to learn about animals made my job really enjoyable,” Albers said. “Being exposed to zoo animals has allowed me to learn about species-specific behaviors, food preferences, and attitudes toward people.”

Albers, a University of Illinois animal sciences student, also created tactile, olfactory, visual, food, environmental, and social enrichment activities to elicit an animal’s natural behaviors.

“My goal was to come up with an enrichment activity, determine a goal and how the animals should respond, execute the activity, and rate the animal’s response,” she said. “My favorite enrichment was socializing our blue and gold macaw with two green-winged macaws. They squawked back and forth for a long time.”

Albers also enjoyed creating diets based on specific guidelines for the animals.

“I had to be creative to figure out which fruits and vegetables they will eat. I find their picky appetites to be very amusing,” she said.

The learning experiences and the opportunity to work closely with exotic animals were the best parts of her job.

“I was able to work with animals that I would never be exposed to otherwise,” Albers said. “I also really enjoyed seeking out the answers to visitors’ questions and expanding my knowledge.”
Soy + chemo drug blocks spread of colon cancer to liver

A University of Illinois study reports a promising new weapon in treating metastatic colon cancer, particularly in patients who have developed resistance to chemotherapy.

Food science and human nutrition professor Elvira de Mejia has found that the soy peptide lunasin binds to a specific receptor in metastatic colon cancer cells, preventing them from attaching to the liver.

“When lunasin was used in combination with the chemotherapy drug oxaliplatin, we saw a sixfold reduction in the number of new tumor sites,” she said.

Almost all colon cancer deaths are caused when cancer spreads to the liver, but chemotherapy targets the primary tumor because metastasis is not well understood, de Mejia said.

Vermont Dia, a postdoctoral fellow in de Mejia’s laboratory, said that “we learned that lunasin can penetrate the cancer cell, cause cell death, and interact with at least one type of receptor in a cell that is ready to metastasize.”

The scientists separated mice into a control group, a group that was injected daily with lunasin, a group injected with oxaliplatin, and a group that received lunasin and oxaliplatin. After 28 days, all animals were examined for new cancer sites in the liver.

The group that received lunasin alone had 50 percent fewer metastatic sites. An even more exciting result was seen in the group that received both lunasin and the chemotherapy drug—there were only 5 new cancer sites, compared with 28 in the control group.

“This huge reduction was achieved with the concentration of lunasin that occurs in only 25 daily grams of soy protein, the amount recommended in the FDA health claim,” Dia said.

Two glasses of soy milk a day provide half the amount of lunasin that was used in this study. It certainly seems feasible to create a lunasin-enriched product that people could consume in a preventive way,” de Mejia noted.

Hunger hits close to home

A new study on hunger, “Map the Meal Gap,” is the first to identify the distribution by county of over 50 million food-insecure Americans.

“Until now, we could only compare the data by state,” said Craig Gundersen, U of I associate professor of agricultural and consumer economics and executive director of the National Soybean Research Laboratory, who led the data analysis on the project. “Having this data by county creates the potential to redefine the way service providers and policy makers address areas of need.”

Gundersen explained that “meal gap” refers to the additional meals required to meet the food needs of the food-insecure population in a selected area. Nationally, the average cost of a meal is $2.54. The study shows that the total shortfall represents an estimated $21.3 billion a year.

“Per person, this is only about $56 more each month on average to address the shortages in their food budget,” Gundersen said.

Among the study’s key findings is that 44 counties in the United States fall into the top 10 percent of both food insecurity and food prices.

“These counties struggle with multiple stressors, including high food insecurity, high poverty, high unemployment, and above-average food costs,” Gundersen said.

The study also demonstrates the distribution of food-insecure persons who are not eligible for food assistance programs. In Illinois, for example, 41 percent of the almost 2 million people who are identified as being food insecure are also ineligible to receive federal assistance, which is limited to people with incomes up to 130 percent of federal poverty levels.

A summary of the findings, an interactive map of the United States showing data for each county, and the full report are available on Feeding America’s website at www.feedingamerica.org.
High-fat diet during pregnancy may program child for future diabetes

A high-fat diet during pregnancy may set a woman’s baby up for future diabetes, even if she herself is not obese or diabetic, says a new U of I study.

“Exposure to a high-fat diet before birth modified gene expression in the livers of offspring so they are more likely to overproduce glucose, which can cause early diabetes,” said U of I nutrition professor Yuan-Xiang Pan.

The diet that caused these changes was a typical Western diet that contained 45 percent fat, he said.

Pan hopes that the study will give doctors a tool to screen newborns born with this propensity and help affected children keep their blood sugar in a normal range and avoid diabetes.

In the study, Pan and doctoral student Rita Strakovsky fed rats either a high-fat or a control diet from the first day of gestation.

“At birth, offspring in the high-fat group had blood sugar levels that were twice as high as those in the control group, even though their mothers had normal levels,” Strakovsky said.

The high-fat offspring also displayed modifications to genes that regulate glucose metabolism.

Pan said these markers would not be erased easily. However, if people were aware of them, they could change their diet and lifestyle, delaying or preventing the development of diabetes.

Strakovsky stressed that pregnant women should consume a balanced diet low in saturated fats. But they should also consume appropriate amounts of healthy fats, including good sources of omega-3 and omega-6 fatty acids, which are important for fetal brain development.

“We hadn’t realized that a mother’s diet during pregnancy has a long-term effect on her child’s glucose production,” Pan said. “We urge pregnant women to eat a balanced low-fat diet that follows government guidelines. Then they can prime their children for a healthy life instead of future medical struggles.”

Swanson’s team used high-throughput molecular techniques to characterize the entire community of oral microbiota, rather than focus on identifying a few individual bacteria. They identified hundreds of species, learning that the oral bacterial community of infants without teeth was much more diverse than expected.

“Like many other diseases, dental cavities are a result of many bacteria in a community, not just one pathogen,” he said.

While more research on the evolution of the infant oral bacterial community is needed, Swanson said educating parents-to-be on oral hygiene and dietary habits is the most important strategy for preventing dental cavities.
Bridging local knowledge and science with berries

Research has shown berries to be very nutritious, but do the people who eat them perceive these health benefits? This may seem like an easy question to answer, but according to rural sociologist Courtney Flint, it’s actually complicated to study and to measure, particularly when the people eating the berries live in remote locations.

“All the science in the world can talk about a particular food as having nutritious properties, but if it’s not perceived that way, people may not include it in their regular diet, particularly with the increasing prevalence of modern processed foods,” Flint said.

Flint was a researcher on a multifaceted project that looked at how residents of three remote Alaskan communities—Akutan, Seldovia, and Point Hope—perceive the benefits of wild berries. A large part of Flint’s contribution was to develop methods that involved local people in the research.

Flint said that the project highlighted the berries as important for community wellness—for traditional reasons including sharing, maintaining cultural values, and spending time outdoors with family and friends—and for perceived health reasons, such as vitamins, balanced diet, and freshness.

“Given that remote Alaska Native communities are grappling with major socioeconomic and environmental changes and associated vulnerabilities, having such a nutritious and valued traditional resource right out their back door during the summertime is a great asset,” Flint said.

Flint hopes that the methods she developed to collect data in this project will be used in future studies with rural sociological components.

One testimony to the atmosphere of trust Flint was able to cultivate is that one of the elders in Point Hope gave her an Inupiaq name, which is rare. Flint received the name “Aqpik,” which means “salmonberry.”

Small fish recover faster than large fish

In football, linebackers are usually the largest players, with the endurance required to get through a game plus overtime. But when it comes to fish, larger doesn’t always mean stronger. Cory Suski, a researcher in the Department of Natural Resources and Environmental Sciences, conducted a catch-and-release study to learn if large fish and small fish had similar physiological responses to being exercised and released, particularly in the time it takes to recover from exercise.

“What we found is that the large fish take longer to recover from exercise than the small fish do,” Suski said. “None of the fish really experienced any major hardships, and they all survived easily, but the small fish recovered faster than the big fish.”

Suski said the findings will be important for fisheries conservation.

“Big fish are reproductively valuable, as they tend to have more babies than small fish,” he said.

“Big fish are also rarer than small fish, and they are more often targeted by anglers. For anglers planning to release a large fish after catching it, the results from this study emphasize the importance of angling the fish for a short duration, handling the fish gently, and getting it back into the water quickly so that excessive disturbances are minimized and the fish can recover quickly, begin feeding, and get back to normal.”

Suski said anglers have always known that big fish are special, and the results of this study underscore the need to treat big fish gently so they can be caught again in the future.
Western corn rootworm:
An evolving problem

It came as no surprise to Mike Gray last summer when reports of severe root damage to Bt corn caused by the western corn rootworm began trickling into his office. “The western corn rootworm is a story of resilience, flexibility, and adaptation to many different management strategies,” said Gray, University of Illinois Extension entomologist and professor of crop sciences. “Its ability to develop resistance to transgenic corn was only a matter of time.”

Western corn rootworms, originally discovered feeding on native prairie grasses in the Great Plains, have made remarkable adaptations, he said. It wasn’t until farmers began growing corn followed by corn (instead of rotating the next year to a different crop) and using nitrogen fertilizers that the pest moved into Nebraska and Kansas cornfields. “Western corn rootworms flourished on those nitrogen-rich plants and, within a few years, we had a serious insect to deal with on a regular basis,” Gray said.

Growers tried controlling western corn rootworms with soil insecticides, but the insects developed resistance to the chlorinated hydrocarbons. New classes of insecticides were created and worked for a while. But again, resistance developed. Crop rotation worked well for quite some time, but eventually it lost its effectiveness, too.

“By 1995, we had widespread damage to rotated corn across east-central Illinois and northwestern Indiana by western corn rootworm,” Gray said. “Then, in 2003, Bt hybrids entered the market and have since become an effective management strategy for most corn growers.”

Last summer, Iowa State University’s Aaron Gassman reported the first field-evolved resistance to Bt by western corn rootworms. Shortly thereafter, Gray was called to northwestern Illinois, where he confirmed severe corn rootworm pruning on Bt hybrids expressing the same Cry3Bb1 protein described by Gassman.

Researchers are continuing to conduct statewide surveys to monitor this pest. “The western corn rootworm story will continue to reveal new twists and turns,” Gray said.

ABE researchers study weather’s impact on biomass production

Miscanthus is one of the promising agricultural crops being evaluated as a potential alternative for biomass feedstock. Recent studies suggest that winter is the optimal time to harvest Miscanthus, so researchers at Illinois have studied the impact weather can have on feedstock production and harvest.

“Winter in Illinois can be very difficult,” said Yogendra Shastri, a visiting research assistant professor in the Department of Agricultural and Biological Engineering, “and you cannot ignore its impact on the feedstock harvest system. The consideration of weather impacts on farm production activities is extremely important when selecting the appropriate regional energy crop.”

BioFeed, a mathematical model researchers developed to determine the best production system for energy crops, now incorporates weather effects, with the inclusion of the probability of working day (PWD) parameter in the model.

“The PWD defines the fraction of days in a specific period that are suitable for field operations,” said Shastri. “Its value depends on a number of weather-related parameters, such as rainfall, snow depth, soil temperature, and soil moisture content.”

Researchers found that the average value of PWD for Illinois in winter is about 30 percent. Model simulations were conducted for Miscanthus for intended biorefinery capacity of about 90 million gallons per year of ethanol. The impact on total cost and farm machinery requirements was then quantified.

“We found that if you assume every day is available for field work, lower PWD value could increase your actual costs by as much as 38 percent. You lose biomass, and that has an impact on all the subsequent operations,” said Shastri. “A way to compensate is to buy more machinery to complete all the operations in the limited amount of time you have. However, this leads to about 34 percent more investment in machinery. We have recommended that instead of starting the harvest in January, begin in late October or early November. That will have a significant impact on reducing the cost.”
Infertility and isolation are soul sisters, according to U of I family studies professor Constance Shapiro. As friends, siblings, and co-workers become pregnant, seemingly with little effort, and deliver babies that become the center of their lives and conversations, an infertile woman—and her partner—often feel alone.

Shapiro’s blog, inspired by her book When You’re Not Expecting, has the potential to change that by providing support for women to survive and even thrive during months, sometimes years, of infertility treatment options, difficult decisions, and emotional turmoil.

“As an infertility counselor for 20 years, I always felt that clients came to me because these issues are so deeply personal. My blog is another safe place that couples can go when they don’t believe their friends and family can understand their anguish and frustration,” Shapiro said.

It is also a good resource for single women and lesbians who want to become mothers but are excluded from much of the material that’s written on infertility, she said.

Shapiro began blogging about infertility in 2009, and within a month, Psychology Today had asked the researcher if she would blog on their website.

“People tell me that it’s been a lifesaver for them. They say I’m talking about issues that are causing them anxiety and that they feel better when they’ve read my blog addressing those concerns,” she said.

What current studies will prompt a future post? Hughes said researchers are debating whether there’s a genetic influence on divorce. Another controversial topic is parental alienation syndrome, which occurs when one parent tries to turn a child against the other.

This year he hopes to get students involved in reading the studies and deciding which articles are important as well as to teach them how to make scientific findings meaningful to the general public.

Many years as a family life expert have taught Hughes that he’ll never run out of material.

“Even when a marriage ends, children and life experience tie a couple together in many ways,” he said.

Visit www.huffingtonpost.com/robert-hughes to read more.
Meeting Needs Statewide

U of I Extension programs help with life’s challenges

No matter where you live in Illinois, there’s a good chance University of Illinois Extension programs will touch your life in 2012.

Extension has always focused on meeting societal needs, and its recent statewide reorganization shifted some staff resources to better address—and anticipate—issues that are important to people and communities all over the state.

“What we’ve found is that no matter where people live in Illinois, they’re concerned about many of the same things—like keeping their families safe and healthy, making sure their children and grandkids are prepared for tomorrow’s jobs, and helping their communities stay strong and resilient,” said Robert Hoeft, interim associate dean for extension and outreach and director of U of I Extension.

Often, education is the best way to help people and communities work their way out of a challenging situation or problem.

Hoeft said Extension’s new program emphases will make it easier for the organization’s local staff to focus on those needs and provide research-based information people can use to evaluate their options and choose the ones that make the most sense for them.

“In turn, our clients’ needs help inform the work of researchers on campus—so we’re better prepared to anticipate and respond to future needs,” he said.

In Family and Consumer Sciences, for example, campus- and field-based staff are collaborating to develop and deliver programs such as Intentional Harmony: Managing Work and Life; Heart Health; I on Diabetes; Parenting 24/7; and Long-Term Care: Talking, Deciding, Taking Action.

Community needs will dictate which programs are offered to audiences in each part of the state. And even in locations where there isn’t a full-time extension educator in a particular discipline, Extension’s web-based resources are available any time at www.extension.illinois.edu.

Hoeft said long-time Extension clients should not be concerned if they don’t see their favorite program area on the list of statewide program priorities.

“We’re still very much in the business of providing 4-H, Master Gardener, and production agriculture programs. How does the old saying go? ‘People have problems, and universities have departments.’ In setting our program priorities, we’re intentionally cutting across disciplines and departments so we can take advantage of different kinds of expertise in meeting people’s needs at different life stages.”

For example, several of the new emphases offer a 4-H youth development component, including Developing a Healthy Lifestyle, Workforce Preparation, and Protecting and Appreciating Our Environment.

“Our efforts may begin with young people who are between 8 and 19 years old, but we recognize that our job is not done when kids ‘age out’ of 4-H,” Hoeft said. “Helping people develop a healthy lifestyle is something our educators work on all across the lifespan—and it involves those with expertise in nutrition, family life, community development, and other areas as well.”

Likewise, Hoeft said, Master Gardener volunteers work across program emphases, including Growing and Accessing Adequate Food to Prevent Hunger; Protecting and Appreciating Our Environment; and Safe Food Production, Processing, Storage and Preparation.

“It’s just a different, more holistic way of looking at people’s needs and our programmatic responses to those needs—making sure we bring the right resources to the table.”

In the case of production agriculture, many of those resources come from agricultural research that’s done on campus and research farms around the state.

“Different models will work for different program areas,” Hoeft said. “What our programs all have in common is that they are built on the land-grant university research base—and they’re focused on fostering a better quality of life, strengthening communities, and creating a healthier, more sustainable world for all of us.”
Illinois farmers are among the most productive in the world, but people cannot live by corn and soybeans alone. Demand for locally sourced food products is growing, and University of Illinois Extension’s local food systems and small farms educators are gearing up to help producers and communities meet that need.

The Illinois Food, Farms, and Jobs Act of 2007 mandates that by 2020, at least 20 percent of the food purchased by state-funded institutions, including schools, will be Illinois-grown. Another goal of the act is for at least 10 percent of Illinois consumers’ total food budgets to be spent on locally produced foods by 2020.

The typical food product consumed in Illinois has traveled more than 1,500 miles to get here, according to the Illinois Local and Organic Food and Farm Task Force. And the cost of shipping produce from faraway places accounts for 10 to 20 percent of the price consumers pay.

“There’s a need for education at every link of the local food chain,” said Kyle Cecil, an Extension local food systems and small farms educator based in Galesburg.

Cecil said his colleagues around the state are bringing groups together to find ways to address some of these hurdles at the community level. As part of that effort, Extension educators are offering Good Agricultural Practices—GAPs—certification courses throughout the state for both new and transitional producers.

Extension staff in many states offer GAPs courses to teach producers how to mitigate food-safety and sanitation threats as they grow, harvest, and deliver food products to retailers and consumers. GAPs-certified producers have taken courses, written food-safety plans for their operations, and been through an independent audit that ensures their facilities are up to GAPs standards.

The certification “indicates a certain level of knowledge and inspires a level of confidence on the part of consumers,” Cecil said. “Even with producers who don’t take that last step—going through an audit—the training gives us a chance to address food-safety issues with growers before they become a problem.”

Extension educators are working with both “transitional producers”—long-time farmers who want to diversify their operations—and those who are brand-new to agriculture. New producers get into the local-foods business for many reasons.

Hundreds of manufacturing jobs have been lost in the Galesburg area in recent years, Cecil said. “I work with people who say, ‘I worked at Butler or Maytag for 25 years, and now I need to provide my own employment. What can I do with one acre?’ They may have been avid gardeners, but had never looked at it from a business perspective. They want to take those skills they developed as a hobby and turn them into a living.

“A tomato is a tomato, but you approach things differently if you’re growing tomatoes for a living than if you’re growing them in your backyard. There’s a livelihood at stake, and the production and handling methods are much different—not to mention the food safety issues that arise when you’re selling food for direct consumption.”

Cecil said rural Americans had a different skill set early in the last century, when they had to be more self-reliant and produce much of their families’ own food. “Many of those skills have been lost along the way, and we’re bringing them back with a lot more scientific research to support them.”

Helping farmers ramp up food production is nothing new for Extension, he said. “In some ways, the work we’re doing to grow local foods production capacity is comparable to what Extension staff did in World War II. Producers are changing from one scale to the next.

“Food is a very cultural issue; things like this don’t happen overnight,” Cecil said. “We’re not likely to see a lot of ‘locally grown’ grocery stores springing up in the next year. But within a few years, I think we will.”
Members of the SNAP Junior Leaders 4-H club in Decatur learn project skills, mentor younger children, develop public presentation skills, and serve their communities by planning and offering a summer day camp for 8- to 11-year-olds.

“Our SNAP Junior Leaders Club members are doing the same things 4-H’ers have been doing for a hundred years. They have officers, say the 4-H pledge at the start of every meeting, sing the 4-H song, and yell the 4-H motto as loud as they can,” Leman said. “If that’s not 4-H, I don’t know what is!”

A few of Decatur’s newer 4-H clubs developed from existing youth groups that needed some additional structure and the solid, research-based educational programming that Extension and 4-H offer.

The Superintendent’s Youth Advisory Council is a 4-H club that works on issues affecting the students who attend Decatur’s public schools. Members and officers meet monthly to work on service-learning and leadership projects. The school district’s community engagement specialist is the leader for the club, which was instrumental in establishing a service-learning requirement for high school graduation in Decatur.

Club members study complex issues and bring proposals to the superintendent and the school board. For example, the city’s two high schools used to hold their graduation ceremonies on the same date, and people with family and friends at both schools couldn’t attend both graduations.

“Our club members worked hard on that issue, and the school board voted last year to set the ceremonies on different dates,” Leman said.

The 4-H’ers also petitioned for permission to leave the school in the middle of the day. So they did research and made a presentation to the school board, and the measure passed.”

Leman said these Decatur 4-H’ers are learning much more than how to make a speech in front of a crowd. They’re discovering how to work within the system to bring about positive change in their community. And in the process, they are preparing themselves for a lifetime of success.

State 4-H director Denise Legvold pointed to recent research at Tufts University showing that young people who have been involved in 4-H are more likely to go to college, make healthier choices, and spend more time giving back to their communities than their peers—regardless of family income, where they live, and a host of other factors.

“Our challenge is to work with our staff and volunteers to continue the good things they’re doing with our existing community clubs all over Illinois—and to extend those benefits to urban youth who want and deserve those same opportunities in their neighborhoods,” Legvold said.

Metro 4-H programs won’t all follow the Macon County model—they will look different from one city to the next. “But one thing’s for sure,” Legvold said. “They’ll all offer young people the life-long benefits that come from being a part of 4-H.”

It’s metro—and, yes, it’s 4-H

Most Illinois rural and small-town youth have no trouble finding a 4-H club in their communities, but it has been a lot harder for kids in urban areas. University of Illinois Extension’s 11 new “Metro 4-H” educators aim to change that in several urban communities around the state.

The Decatur area has a head start on Metro 4-H programming, thanks to the foresight of its Extension Unit Council. Several years ago, Macon County council volunteers urged local Extension staff to expand 4-H programming in the city of Decatur, according to Amy Leman, the Decatur-based Metro 4-H educator.

Leman said Metro 4-H groups are establishing their own traditions and positive reputations in their communities. The 32 members of Decatur’s SNAP Junior Leaders 4-H Club plan and teach a Super Nutrition Activity Playground day camp every summer, reaching more than 500 8- to 11-year-olds with lessons that encourage healthy eating and physical fitness.

The first 11 Metro 4-H educators are working with youth in and around these cities:

- Bloomington-Normal
- Chicago (city and suburbs)
- Decatur
- LaSalle-Peru
- Metro East area (near St. Louis)
- Peoria
- Rockford
- Springfield
Lynda Cabrales is a vocal proponent of RAP, the Research Apprentice Program for high schoolers sponsored by the College of ACES. She is also one of its greatest success stories. Cabrales received her Ph.D. in 2006 as an agricultural engineer. It was a path she never planned to take—until she became involved in RAP.

RAP is a two-phase summer program that introduces high school students in minority and underserved groups to careers in the agricultural, consumer, and environmental sciences. Cabrales grew up in a predominantly Hispanic neighborhood in the Chicago area, and counselors at her high school encouraged her to apply for the program.

Cabrales spent her second summer with RAP doing research in the lab of Steven Eckhoff, a professor in the Department of Agricultural and Biological Engineering. Cabrales enrolled in the department as a freshman the next year, and after graduating she went on to earn master's and doctoral degrees.

Today Cabrales is a senior engineer with Kraft in Madison, Wisconsin. She considers it part of her mission to help others in their educational journeys, so she has worked diligently to forge a connection between Oscar Mayer (owned by Kraft), RAP, and the U of I. Oscar Mayer has made significant financial contributions to the program, and Cabrales and other Illinois alumni in the company work to recruit students to RAP.

“I had experience in the RAP program, and I understand the corporate mission of Oscar Mayer,” Cabrales said. “I’ve been able to help coordinate a program that’s beneficial for everyone involved. When you put together a good plan and the commitment is there, it works because it’s the right thing to do.”

“If you had told me when I was a freshman that this was the path I would take, I wouldn’t have believed you,” she concluded. “I can honestly say I wouldn’t be sitting here with a Ph.D. in ag engineering if it weren’t for the RAP program.”

For more information on how you or your company can support RAP, contact the ACES Office of Advancement at 217-333-9355 or email acesadvancement@illinois.edu.

When ACES junior Anita Lucius first entered the laboratory to investigate the antidiabetes properties of blueberries, three people inspired her work.

First were Toshiro and Hiro Nishida, whose $25,000 gift to fund undergraduate research in the Department of Food Science and Human Nutrition results in two $500 annual gifts to students like Lucius, one of this year’s award winners.

“I can never thank them enough for this award,” she said. “I love doing research, and I will soon begin working on my master’s degree in food science.”

The third person motivating Lucius’s research is her mother, who struggles with diabetes. “I know that breakthroughs in the lab can make a real difference in people’s lives,” Lucius said.

Toshiro Nishida, an emeritus professor who spent 40-plus years teaching and studying nutritional biochemistry and molecular biology, knows the importance of undergraduate research.

“Many undergraduate students worked in our laboratory. Their assistance in laboratory work and in preparing manuscripts and grant proposals was indispensable to our research,” he said.

This early exposure to planning an experimental approach and analyzing and interpreting results gives students a head start on promising careers in science, he said.

Among the many successful scientists who began their careers in the Nishida lab are Clarke Halfman, former director of the graduate program in pathology at Chicago Medical School, and Gunther Fless, a professor of medicine at the University of Chicago. These former U of I lab mates even collaborated on a pioneering research project after leaving the U of I and establishing their careers.

Lucius, too, is off to a promising start. In spring 2011 she was a finalist for the American Chemical Society Undergraduate Research Award, and she is an intern with Campbell Soup Company.

“The opportunity to do undergraduate research has meant so much to me. I want to follow in the Nishidas’ footsteps in encouraging motivated students to excel,” Lucius said.
ACES scholarships make a difference

For many students, scholarships are essential to bridging the gap between a student’s own resources—including savings, earnings, and financial aid in the form of grants and loans—and the full cost of an education.

“I often hear people reminisce about working their way through school, and they expect today’s youth should be able to do the same thing,” said ACES assistant dean Jason Emmert. “However, across the country, increases in tuition over the last decades have made it nearly impossible for the typical student to earn enough to cover all college expenses, even if he or she works full-time during the summer and part-time during the academic year.

“Students are willing to work hard to pursue their dreams, but many need the extra help from scholarships to make it possible to pursue their education at a top-notch institution like the U of I,” he said.

Jared Eaton, ACES Aspire Award Winner

Jared Eaton didn’t let 600 miles stop him from attending the University of Illinois. Although Eaton grew up in a different part of the country, his ties to U of I ran deep—both of his parents are alumni. A new scholarship, the ACES Aspire Award, brought Eaton from Acworth, Georgia, to Illinois last fall.

“Plain and simple—this award helped me afford out-of-state tuition,” Eaton said. “I’ve always been drawn to the U of I because of the family tradition. Plus, I knew the College of ACES would allow me to combine my interests of agriculture and machinery in the technical systems management program.”

One of the advantages of the ACES Aspire Award is that it reaches out to a more diverse group of students from all across the country.

“Jared is an outstanding student,” Emmert said. “He is an example of a true Illini who happened to grow up farther from campus than some of our other students. With scholarship support, it became feasible for Jared to attend, which is fortunate for U of I.”

Amanda Rosendale, JBT Scholar

A Jonathan Baldwin Turner (JBT) scholarship will save food science and human nutrition student Amanda Rosendale of Augusta, Illinois, more than $10,000 toward the cost of her college education and financially will open opportunities for her to study abroad or attend graduate school.

“Amanda possesses all of the academic ability to succeed on our campus,” Emmert said. “But she needed the opportunity to attend, and our scholarships helped her do that. As a JBT scholar, she is already excelling and contributing to our college and campus in many ways.”

Rosendale said being a JBT scholar allows her to be recognized and rewarded for her past efforts as a scholar, athlete, and community leader. It also motivates her to work hard and live up to high standards while pursuing her degree.

“As a freshman, I learned fundamental concepts that are key building blocks for my major,” Rosendale said. “I know my professors will keep building on those concepts until they reach real-life applications. This will help me handle future work challenges with confidence.”

Each year, nearly $2 million in scholarships supported by generous alumni, corporate sponsors, and other supporters are awarded to ACES students, Emmert said.

“Scholarships are an integral part of our efforts not only to find outstanding students, but to make it possible for students like Jared and Amanda, who recognize the value of a U of I education, to attend,” Emmert said. “I am confident that in the future they, along with many other recipients, will seek the opportunity to make a difference in the lives of the next generation of Illini.”

For more information about ACES scholarships, visit students.aces.illinois.edu/scholarships. To learn how to support a scholarship, contact the ACES Office of Advancement at 217-333-9355 or email acesadvancement@illinois.edu.
ACE alumnus makes far-reaching scientific and humanitarian contributions

Bir Bahadur “BB” Singh is the winner of the University of Illinois 2011 Madhuri and Jagdish N. Sheth International Alumni Award for Exceptional Achievement. Singh received a bachelor’s degree from the G.B. Pant University of Agriculture Technology in Pantnagar, India, and master’s and doctoral degrees in agronomy from the University of Illinois.

One of Dr. Singh’s most significant contributions to agriculture has been the development of over 40 varieties of cowpea with higher yield potential and tolerance to drought and aphids, as well as resistance to certain diseases. The cowpea, or black-eyed pea, has been an important and popular food crop in the southern United States and many African, Asian, and South American countries. Cowpeas are an alternative source of protein where people cannot afford meat and fish, providing those in poor and developing countries with an important source of nutrition.

Robert Hoeft, professor and former head of the Department of Crop Sciences, nominated Singh for the prestigious award, calling him a truly outstanding alumnus.

“The scientific and humanitarian contributions made by Dr. Singh, his mission-oriented scientific work, and his untiring desire to help people has markedly improved the lives of millions of people in underdeveloped countries,” said Hoeft.

In addition to his cowpea research, Singh started the first soybean breeding program in his native India, and he developed farmer-to-farmer community-based seed production and sales systems on a global scale. Singh divides his time between India and the U.S. He is currently a visiting professor of plant breeding and genetics at G.B. Pant University and a visiting professor in the soil and crop sciences department at Texas A&M, where he teaches and conducts research.

Weller named Jefferson Science Fellow

Curtis Weller has been named one of 13 Jefferson Science Fellows for 2011–2012. The JSF program, financed by the U.S. State Department and coordinated by the National Academies, brings experienced scientists and engineers from American universities to the State Department or the U.S. Agency for International Development (USAID) for one year.

Weller received bachelor’s and master’s degrees in food science and a Ph.D. in agricultural engineering from the University of Illinois. After finishing his doctorate, he took a position at Clemson University in South Carolina. In 1992, he moved to the University of Nebraska-Lincoln, where he is a professor of food and bioprocess engineering. Weller’s research interests include value-added processing of agricultural commodities, with a primary interest in grain sorghum.

As a Jefferson Science Fellow, Weller works in Washington, D.C. with USAID in the Bureau for Food Security, providing analysis of policy and programs.

“I’ve benefited by learning and experiencing the mechanisms by which science, technology, and engineering are infused into the public policy arena,” said Weller. “Participation in the JSF program has given me additional understanding of the translation of on-campus discoveries into our global society.”

Weller will return to his academic career at UNL following his USAID assignment, but he will remain available to the U.S. government as an expert consultant for short-term projects for the next five years.

“I wouldn’t be doing the things I’m doing today if it weren’t for the guidance, leadership, and mentoring of the people I worked with in my time at Illinois,” said Weller. “My thanks to them is to work to ensure food security and help prepare the next generation for this work. We’re charged with doubling food production by the year 2050. I hope to do my part to help make that happen.”
Condon provides gift of seed money for future growth

Gifts for bricks and mortar are extremely important to the College of ACES, but just as important and often more difficult to obtain are donations to fund visionary programs. Such is the gift of $300,000 from William (Bill) J. Condon ’61 to the Department of Agricultural and Consumer Economics to institute a unique position.

“Bill Condon is the go-to guy with the vision to understand the needs of the department and taking action to help his alma mater develop new programs and initiatives,” said ACE department head, Paul Ellinger. “We want to recruit talented high school and community college students who want a career in business and finance and agricultural economics. Bill’s gift will significantly boost our student advising capabilities.”

The new Bill Condon Academic Advisor/Recruiting position will ensure personal contact with each student to develop an individual success plan, including assistance in the career-decision process throughout his or her academic career. It will also support the development of marketing strategies to recruit the best and brightest students to the College of ACES.

Condon has enjoyed a distinguished career in commodity trading and financial services industries. He has owned a seat on the Chicago Board of Trade since 1969. As a loyal alum, Condon has served as president of the Rockford Area Illini Club and has organized and hosted numerous alumni events in the Rockford area.

His private giving has made an enormous impact on the college. A generous gift in 1999 in honor of his father, Harold Condon ’23, helped build the ACES Library and Information Center, and in 2006 he funded a 75th-anniversary history book about ACE.

Condon gives his heart and time to other philanthropic endeavors as well. He is a long-time supporter of the North American Shriners organization, with its network of pediatric specialty hospitals, and has marched as a clown in many colorful Shriners parades over the years.

National Great Rivers Center receives national prize

The National Great Rivers Research and Education Center (NGRREC) in Alton, Illinois, received the U.S. Water Prize from the Clean Water America Alliance. The award honors individuals, institutions, and organizations that have made outstanding achievements in the advancement of sustainable solutions to our nation’s water challenges.

The award is the first of its kind to recognize successful efforts in protecting and improving the health of watersheds in the country.

“The collaboration between the Lewis and Clark Community College in providing these solutions is transformative. The award clearly shows that the vision in building NGRREC is right on target and very effective.”

Since 2002, NGRREC has developed programs involving partner institutions and engaged hundreds of volunteers, thousands of middle and high school students, and more than 200 college students through its annual intern program.

Through the center’s education and outreach efforts, the facility’s numerous sustainable design features—on-site water treatment, wind and hydrokinetic power, solar lighting and heat, a green roof, permeable pavement—are promoted regionally and nationally as a model for how resource-compatible development and community awareness and empowerment can go hand in hand. NGRREC supports the use of green infrastructure as a critical element of comprehensive wastewater planning and conservation reuse.

For more information, visit www.ngrec.org.

Bill Condon talks with Robert Easter.
The Orange and Blue is deeply embedded into the hearts of the 2011 College of ACES Alumni Association’s Family Spirit Award winners: the Bauer, Mickelson, Pizzo, and Russell families. On November 18, this extended family of Illini supporters was honored with the prestigious award at the ACES College Connection event. Of Joseph and Elizabeth Pizzo’s six children—Pat, Jim, Joel (deceased), Jack, Pamela, and Peg—five are U of I graduates, and three graduated from ACES. All six children married into families with strong ties to the university and are transmitting their Illinois spirit to their children; nine of the Pizzo grandchildren have attended or are attending U of I. Read more about this family’s story in the next issue of ACES@Illinois.

**ACES Family Spirit Award: Bauer, Mickelson, Pizzo, Russell**

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Monsanto expands support for future plant breeders

To help meet the increasing need to develop more plant breeders, in 2011 Monsanto expanded its support of the University of Illinois Plant Breeding Center (IPBC) by funding eight additional Monsanto Fellows in Plant Breeding.

Monsanto has been a primary partner in the center’s mission to educate the next generation of plant breeders, gifting ACES with $1 million in 2008 to support graduate fellowships.

Since then, the company’s gift has provided support to recruit 10 more top-notch graduate students and grow educational capacity at the U of I. IPBC currently has 58 students, making it one of the largest plant breeding programs in the nation.

“The Monsanto Fellowship Gift became the impetus for numerous upgrades and new resources, including a professional development program and the availability of experiential learning opportunities,” said Rita Mumm, IPBC director.

In August 2011, two students were selected as Monsanto Fellows in Plant Breeding. The balance of the fellowships will be filled as outstanding new applicants are identified through 2013, she said.

“Here at Monsanto, we recognize the ongoing and increasing need for top-performing plant breeding talent,” said Sam Eathington, Monsanto global breeding lead.

“With the renewal of this fellowship, it is our hope that even more students can develop additional skills and knowledge that are critical to train the next generation of plant breeders. As a graduate of the plant breeding program at Urbana-Champaign, I look forward to continuing our partnership with the University of Illinois.”

Mumm said this gift exemplifies Monsanto’s continuing commitment to training the next generation of scientists involved in crop genetic improvement.

“They are helping us shape the future of plant breeding education while creating a pipeline of skilled and innovative entry-level scientists for this industry,” she added.

To learn more about supporting the Illinois Plant Breeding Center, contact Rita Mumm at ritamumm@illinois.edu.

$9 million to modernize extension systems in poor countries

A consortium led by the College of ACES has received $9 million from the United States Agency for International Development (USAID) to improve the livelihoods of rural farmers in the world’s poorest nations by modernizing and strengthening their agricultural extension systems.

The five-year project, “Modernizing Extension and Advisory Systems” (MEAS), will involve a strategic analysis of the activities and investments needed to strengthen the pluralistic extension systems in 20 of the poorest developing countries.

“This is the first significant investment that USAID has made in several decades to help strengthen national agricultural extension systems in poor developing countries,” said Burton Swanson, director of the MEAS project and ACES professor emeritus. “Extension systems in the poor countries of Africa, Asia, and Central America need to undergo a significant change to effectively serve the needs of small-scale male and female farmers. Our goal is to transform these extension systems so they can play a key role in both increasing farm incomes and improving the livelihoods of the rural poor, especially farm women.”

The changing global economy has created many new market opportunities for agricultural producers worldwide, Swanson said. The MEAS project will help train and support local extension workers to be “knowledge brokers” and link farmers to markets by drawing on the expertise of innovators who are already producing and marketing profitable agricultural products.

“Our first goal is to develop training materials for development specialists, policy makers, extension directors, and extension field staff,” Swanson said. “We plan to complete case studies and pilot projects to validate and replicate good extension practices as documented in other countries. We will also conduct in-depth assessments of the extension systems in the target countries, with a goal of identifying the strengths and weaknesses of these existing systems.”

Burton Swanson (right) at a farmer field school training session in northern Rwanda. The Ministry of Agriculture has been training farm leaders in northern Rwanda about production practices for Irish potatoes, carrots, and other root and vegetable crops that can be produced in the area’s rich volcanic soils.
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- *Creating Habitats and Homes for Illinois Wildlife*, 212 pages, $25.00
- *Native Plants in the Home Landscape for the Upper Midwest*, 120 pages, $24.95

Order online at PubsPlus.illinois.edu

Greenhouse shade curtains manage the sun, save energy

Installing shade curtains in a greenhouse may seem counterproductive, but the new computer-controlled system of curtains in the U of I greenhouses controls the sunlight, reducing energy and labor costs. This state-of-the-art technology was already installed in 18 of the greenhouse rooms, but thanks to an interest-free loan from the U of I Student Sustainability Committee, nine more rooms were equipped with curtains.

“Before we had the curtains, we had to spray whitewash on the greenhouses every summer to keep the rooms cool, and then every fall we had to take it off,” said Ruth Green, who recently retired as plant care facility coordinator. “Applying the whitewash and rinsing it off every year was labor intensive and required special safety measures because it had to be done on high ladders.”

According to Green, whitewash is archaic compared with contemporary standards. Without it, the summer sun burns plants inside the greenhouse and rapidly raises the room temperature. The whitewash helped, but on cloudy days the rooms became very dark.

“We had to turn the lights on to compensate for the lack of sun—which used electricity and wasted energy,” Green said.

The curtain system integrates a weather station outside the greenhouse and a centralized computer to automatically adjust the curtains based on the conditions of the day.

“Researchers who conduct experiments in the greenhouse specify the number of watts per meters squared of sunlight per day that they want, so each room can be programmed for the light intensity required for that specific crop,” said plant care facility coordinator Nathan Deppe.

Using computer simulation software to estimate energy use, Green and Deppe believe the shade curtain investment will yield 15 percent in energy savings.

“The curtains have obvious energy savings, but they also save us the labor and associated costs to apply and remove the whitewash, as well as providing improved safety; we don’t have to get up on ladders any more,” Green said.
Robert Easter retires
(Continued from page 3)

Looking for ways to advance the university’s mission is part of being an administrator, he said.

In 2009, Easter’s plans for retirement changed when he was named interim vice president and chancellor during a time of great financial tension, with state funding for the university being reduced and reliance on tuition increasing.

“We had to evaluate programs serving the greater public good, such as Krannert Center, museums, and service activities that should really be paid for by taxpayers,” Easter said. “How do you sustain those activities at the same time your base funding is being supported by tuition?”

Leading by example

Easter has shown impressive ability to take on hard issues, driven mostly by lack of funding, and to make changes that allowed the U of I to maintain its leadership role in academia, Parrett said.

“He’s respected both at the campus level and with stakeholders throughout the state,” Parrett said. “His strong, fair, open leadership style allowed people to contribute to decision-making processes. He listened and asked good questions. He made difficult decisions that people knew were fair.”

ACES Dean Robert Hauser agreed; he described Easter as a skilled administrator with clearly defined and articulated goals.

“Leadership in an academic setting is more than making right decisions,” Hauser said. “It’s about getting others on board so those decisions lead to meaningful actions.”

Easter recognizes leadership talent in others, too, said Neal Merchen, animal sciences department head.

“He has the ability to bring out talent in people,” Merchen said. “We’ve become better because of it.”

Hauser said it can be hard to separate professional characteristics from personal ones, but in Easter’s case, he believes, they complement each other when defining success.

“Easter is a man of utmost integrity,” Hauser said. “If there is one quality that best describes him, it’s that. If there is a second, he’s simply a nice guy. And let’s not underestimate that.”

Starting a new chapter

Although Easter is unsure of precisely what retirement will look like, he’s not going out to pasture just yet. On the contrary, he has agreed to fill in for a few months as interim vice-chancellor for research (VCR) until the search now underway for a permanent VCR is completed. He also wants to spend more time traveling, reading, gardening, and fixing up his dad’s 1936 John Deere model B tractor.

Those who know Easter well believe his retirement will simply bring a different set of professional activities, plus a little more freedom to spend time with his wife, children, and grandchildren.

Whatever his next adventure, one thing is sure. Robert Easter will still find ways to bring out the best in others each day.

In honor of Easter’s retirement, a scholarship fund has been established. To learn more about supporting this fund, please contact Meg Cline, Associate Dean for Advancement, at mcline@illinois.edu or 217-244-3980.

Make a Gift.

For more information about how you can support the College of ACES, visit advancement.aces.illinois.edu/makegift

“I am extremely grateful and honored to have received ACES scholarships. It is the support of generous donors that eases the financial situation and motivates students like me to excel in agriculture.”

Jill Johnson, scholarship recipient