Greetings,

As summer reaches full swing, the College of Agricultural, Consumer and Environmental Sciences (ACES) at the University of Illinois reflects on its recent graduates who moved on in May to exciting career and graduate-study opportunities. We now look forward to welcoming new faces to campus, including our freshmen, transfer students, and graduate students. As always, the caliber of incoming students is exceptional.

This inaugural issue of ACES@Illinois highlights some unique opportunities available to our students, such as programs designed to assist traditionally underserved groups. And with the costs to attend our top university on the rise, we underscore how the investment in an education from the College of ACES leads to high, lifelong returns.

We want you to know about key research initiatives taking place in the College of ACES and to update you on new programs being launched by University of Illinois Extension. Also included are inspiring stories about ACES alumni and friends who are making a difference for our college.

We hope our new ACES@Illinois, which will be produced twice a year, reminds you of why you can be proud of your connection to the College of ACES. Please know that we are most thankful for the continuing and generous support of our many friends, partners, and colleagues.

Stay in touch,

Robert Hauser  
Dean of ACES
Students Going plACES

ExplorACES
More than 2,000 high school sophomores, juniors, and seniors came to the U of I campus to ExplorACES on March 11 and 12. The event, which boasts 100+ exhibits and is run totally by current ACES students, gives prospective students a sense of the smaller college atmosphere within the University of Illinois.
The return means more than the price tag

The price tag on a college education has changed significantly over the past 20 years. University of Illinois dairy science graduate Rod Stoll appreciates that his tuition bill in 1989 looks different from tuition bills today. Yet he understands what it’s like to attend college on a tight budget because he was in that same position as a student.

“I feel indebted by the scholarships I received,” Stoll said. “It would be fascinating to calculate the true financial return on my U of I investment. I am confident it would be a humbling statistic that would motivate me to increase my annual giving back to U of I and the College of ACES.”

Choosing a college during a time of economic instability can be overwhelming to high school seniors and their parents, said Jason Emmert, ACES assistant dean of academic programs.

“While tuition is a logical factor to consider, students and parents would benefit from taking a closer look at the value of the education provided by the colleges they are considering and weighing the expected return on investment,” Emmert said.

A recent report by PayScale.com shows that after subtracting the cost of the education, the return on investment—the additional expected income of a college graduate compared to an Illinois high school graduate over 30 years—is $888,200 at the U of I, compared to the Big Ten universities’ average of $585,100.

“The report also shows that U of I’s return on investment is three times greater than the average return of other Illinois colleges offering comparable majors to the College of ACES,” Emmert said.

Starting salaries are also an important consideration. Among public universities, U of I graduates rank first in the Big 10 and seventh nationally in both starting and midcareer median salaries, according to PayScale.com.

High starting salaries don’t just happen, Emmert added. The career preparation that U of I students receive helps them achieve higher starting salaries because of their wide range of experiences.

“One thing I know for certain is that my career path would never have unfolded in the same way without my U of I degree,” Stoll said. “U of I was the only Illinois college that Monsanto’s dairy business recruited when I got my first job as a product development representative. And my educational network has been an essential ingredient to the other stops along the way in my career journey.”

More than 80 percent of 2009–10 ACES graduates had work, volunteer, or internship experiences related to their professional aspirations before graduation, said Jenny Neef, College of ACES director of career services.

Neef manages the development and delivery of career services and resources to help students. Every fall, she coordinates the ACES and Biosciences Career Fair, which connects more than 100 future employers with more than 700 students on the U of I campus in one day.

U of I is a stop recruiters can’t afford to miss. As noted in a Wall Street Journal article, U of I was ranked No. 3 in a list of the Top 25 schools whose graduates are top-rated by recruiters.

These recruiters said U of I graduates perform well and tend to stay with the company. They also noted that graduates of top public universities are often the most prepared and well-rounded academically, allowing them to fit well into corporate cultures.
“The University of Illinois is one of our targeted schools,” said Megan Mortier of Pioneer Hi-Bred International. “The College of ACES has a lot of variety and different areas of study in their college that line up with many segments of our business. With 200 internship opportunities each year and a need to hire 4,000 employees within the next five years, we have many opportunities.”

Stoll offers a unique perspective as both a graduate and an employer trying to find the best applicant for a job. “I respect U of I graduates for being especially proficient on-the-job learners and for possessing the softer skills related to emotional intelligence that allow them to be effective team players and leaders,” Stoll said.

These attributes mean that many ACES students are offered more than one job opportunity upon graduation, Emmert said.

Preparing students to achieve graduation may be one of the most under-evaluated aspects of an academic program’s value, said Laurie Kramer, ACES dean of academic programs.

According to Kiplinger’s Personal Finance magazine, when compared with other universities offering majors similar to ACES, U of I has the highest four-year graduation rate among Illinois public and Midwest universities. “Our graduation rate exceeds the national average by more than 25 percent,” Kramer said. “This is important, because students who are unable to complete their programs in four years need to pay additional tuition. In Illinois, tuition rates are locked in for four years, so programs that take longer to complete could cost considerably more.”

Kramer said she’s proud of U of I’s ability to offer enough spaces in key courses and provide good advising so students know exactly what they need to fulfill degree requirements.

“Graduating in four years not only helps students launch their careers in a timely fashion, it also helps them graduate with lower debt. U of I students have the second-lowest debt at graduation in the Big Ten,” Kramer said.

For most ACES students, the return on education investment is more than a dollar figure. It’s the sense of community they experience within a Big Ten campus. It’s the chance to be involved in clubs and international study. And for many, it’s the opportunity to be taught by award-winning faculty.

“The best way to quantify my return on investment is not in terms of numbers,” said Jay Scholl, an international resource and consumer economics graduate from the Department of Agricultural and Consumer Economics. “The real returns in investment I’ve experienced are the people I’ve met and the friendships and business relationships I’ve created because of my undergraduate education.”

Scholl, an attorney with Davis and Campbell in Peoria, said he can’t imagine where he’d be without the U of I.

Stoll agrees that the career value of his degree is grounded as much by the experiences he gained beyond the classrooms as the education he received inside them.

“My internship experiences were critical parts of my interview stories,” he said. “The personal development provided through my experiences as Nabor House president, Illini Dairy Club president, and an Illini dairy judging team member greatly enhanced my leadership skills and teamwork competencies. And the Illini network of relationships of student peers, professors, administrators, and alumni have created amazing value for me throughout my career.”

As a student in ACES, attorney Scholl believes, he experienced the best of both worlds.

“U of I is a big college with the resources of one of the best universities in the world, but ACES helped give U of I a small-campus feel that made it easier to get to know people,” Scholl said. “In ACES, you are surrounded by people who are just as motivated as you are—people who will be leading companies, running for political office, and making true change in the world.”

JBT scholarships attract students to ACES

Jeff Zohn, a senior in human development and family studies, believes choosing a college is not about finding the best school—it’s about finding the right school.

“For me, it was easy,” Zohn said. “I knew there were other schools with similar opportunities. I knew there were other schools where I could be happy and have fun. I knew there were other schools that could give me an outstanding education. But in all of my research, there was not another school that could guarantee me a high quality of life for four years while preparing me for the next step of my education.”

While receiving money for college every year is a great honor for Zohn, he said the distinction of being named a Jonathan Baldwin Turner (JBT) Scholar is the true reward.

Zohn said the money is helpful and makes every bill that comes his way a little less stressful. The extra dollars he saves now will go a long way toward supporting the rest of his education.

“Being a JBT Scholar holds you to a higher standard,” he said. “I wanted to make the university and my family proud by maintaining academic excellence combined with philanthropic endeavors and leadership. As a JBT Scholar, I believe I accomplished those things and look back with no regrets.”

JBT Scholarships, funded entirely by private donations, are awarded on the basis of leadership, good citizenship, and scholarly achievement. Donors include ACES alumni, agribusinesses, banking institutions, commercial industries, professional associations, and private individuals. For more information, go to students.aces. illinois.edu/scholarships/jbt. To support this program, contact the ACES Office of Advancement at 217-333-9355 or acesadvancement@illinois.edu.
ACES beyond the classroom

Students who become a part of the ACES community are encouraged to explore the world outside of the classroom. From China to Guatemala, and from black peppers to homeless dogs, ACES students are discovering that the world they live in is even bigger than they might have imagined.

Weeding through opportunities at Dow AgroSciences

Not only did Ross Recker, a senior in crop sciences, have a great time during his internship with Dow AgroSciences, but he received critical direction for his future that couldn’t be discovered in a classroom.

“My internship confirmed my interest in crop protection,” Recker said.

He practiced skills learned in the classroom and expanded on ideas he was taught in the Department of Crop Sciences. From inoculating and spraying to rating and collecting soil samples, he learned how to perform many tasks that will help him as he pursues his career path.

“I gained so much from my internship,” he said. “I implemented knowledge gained from my U of I education at the University of Illinois, networked and learned from a wide variety of field scientists, traveled the Midwest, and achieved a basic understanding of field research.”

Growing cocoa in Central America

Katie King’s stomach flip-flopped as she boarded a plane to fly to Central America for her first international travel experience. Having grown up on a farm in New Berlin, King, a senior in agricultural education, knew a lot about agriculture. But she also recognized that her awareness of agriculture in other parts of the world was minimal.

In order to be a better agricultural educator, she took an ACES Hort 199 study abroad trip to Costa Rica and Guatemala to expand her knowledge base and increase her effectiveness as a teacher.

During the two-week trip, King spent one night with a host family in Costa Rica. King and Kayla Meyer, a sophomore in agricultural education, stayed with Chepita Pereira Calderon on her family’s chocolate farm, Finca

Caring for animals at the Champaign County Humane Society

Leigh McDonald never expected to find the opportunities she has experienced as a medical lab intern at the Champaign County Humane Society. McDonald, a sophomore in animal sciences, said her internship has affirmed her desire to become a small animal veterinarian.

“It’s a great feeling to be able to help care for these animals,” she said. “Every day we get new animals in here that need our help. Some come from really rough environments, so it’s extremely rewarding to help them get adopted into good homes.”

The local humane society is an integral teaching partner with the Department of Animal Sciences, embracing its undergraduates and providing them with unique learning experiences that are not available on campus.

“I’m amazed at the vast experiences I’ve had that I know I couldn’t find working in a smaller practice,” McDonald said.

The opportunities and experiences gained during her internship are helping prepare Leigh McDonald for her career.

Protecting pandas in Cheng Du

Interacting with endangered pandas at the Binfengxian Panda Research and Conservation Center in Cheng Du, China, was a dream come true for Jessica Kramer, a senior in animal sciences.

“Refuge pandas went to Binfengxian after an earthquake destroyed the Wolong Panda Center in 2008,” Kramer said. “Many pandas died, and habitats were destroyed. They moved the refuges to this center and opened it for public volunteers.”

As a volunteer, Kramer helped clean and maintain the facilities and fed the pandas twice a day. She also spent time observing the animals. However, the best lesson she learned was that not all people live like Americans.

“U of I has helped me gain confidence in my ability to adapt and learn,” Kramer said.

“This has helped me be independent and successful, whether I’m sitting in a class on campus or traveling across the world to China.”

Jessica Kramer traveled to China to gain hands-on experiences working with pandas.
La Virgen. Despite the language barrier, King and Meyer learned firsthand about an agricultural lifestyle unlike their own.

“This trip opened my eyes to different cultures and how things operate in Central America,” King said. “Almost everything is done by hand. It made me realize how fortunate we are in the United States. I believe it’s important to know where your food comes from and how it’s grown. I understood American agriculture, but now I know more about other products I enjoy, such as coffee, chocolate, and pineapple.”

**Finding a future at John Deere**

Kim Heinecke, a junior in agricultural and biological engineering, has served as an intern for John Deere every summer since 2007.

Heinecke’s first three internships were at the Deere facility in Ottumwa, Iowa. She worked as a supplier quality engineer, a facilities and maintenance engineer, and a test engineer. Each position offered unique opportunities, but she said her time as facilities and maintenance engineer was especially memorable.

“I worked on a million-dollar project to relight the factory,” said Heinecke. “We switched from metal halides to fluorescents. Two years later the plant was recognized for the project by the State of Iowa. It was pretty cool knowing I helped get the ball rolling on that one.”

Heinecke’s fourth Deere internship was in Davenport, Iowa, where she worked as a manufacturing engineer.

She plans to serve a fifth internship this summer in Dallas, Texas, traveling to different dealerships in the south-central region of the United States, evaluating Deere’s process of long-distance learning.

**Tracking leopards in South Africa**

Arsema Weldu couldn’t wait to travel 8,500 miles to Pretoria, South Africa, to observe African wildlife at risk for extinction. Weldu, a senior in animal sciences from Harare, Zimbabwe, said this study abroad program was a great introduction to wildlife management issues faced by both animals and the people living around them.

Weldu learned about a variety of issues during guest lectures at the Pretoria Zoo, including problems faced when animals are released into the wild after treatment. She also spent a week at the South African national parks and game reserves located by Kruger National Park. From sunup to sundown, their group drove across Kruger and saw wildlife feeding, including lions, rhinos, elephants, and Cape buffalo.

The trip concluded with a 10-day stay at the Sabi Sands Private Game Reserve, where students studied wildlife behavior and ecology, tracked the Big Five (lion, leopard, buffalo, rhino, and elephant), went on bush walks and drives, and experienced night safaris.

“Being in a new country and learning about the people’s views really helps develop one’s own opinion and broadens one’s mind,” she said. “It encourages the ability to tolerate, understand, and acknowledge the importance of incorporating different ideas when trying to solve a problem—important experiences you just can’t gain from the classroom.”

**Developing new products at Newly Weds Foods**

If there’s one thing Stephanie Diamond, a senior in food science and human nutrition, has learned at the U of I, it’s how to be proactive.

Diamond said food science has taught her to think critically about her role as a leader in the agriculture industry. An internship with a food business in Chicago solidified her decision to pursue a career in agriculture.

Last summer, Diamond interned in the new-technology department of Newly Weds Foods, a producer of customized seasonings, batters, and breading. She developed her own consolidation project of chili peppers and black peppers that she presented to research and development managers and directors.

“I loved my internship experience,” she said. “It taught me a lot about how the food industry functions and how I function as a part of it. It really solidified my decision to work in the food industry and was confirmation for me that I chose the right major.”

Diamond said it’s important that education—both inside and outside of the classroom—do more than teach facts and figures.

“Our education needs to help us transition from being an observer in our industry to a protagonist,” she said. “My education at Illinois has done exactly that.”
For Maria Villamil, being the tenth of 11 children in a middle-class Latino family in southern Argentina carried certain expectations. Like her sisters and friends, she was expected to get married and have children. But she believed she could accomplish other dreams, too. Unfortunately, going after her dreams meant leaving loved ones behind.

“For many Latinos like me, family needs come before individual aspirations,” said Villamil, a professor in the Department of Crop Sciences. “It’s tradition that you take care of family first. Children are encouraged to go out and earn money to help support the family—education, especially for women, is often not encouraged because of more pressing concerns.”

Family attachment can become a barrier for students pursuing an advanced education unless the family is involved and supportive of the decision, Villamil said. Combine this with challenges common to students in math, science, and technology, and the result is a shortage of Latino students in these growing fields.

About 6 percent of undergraduate ACES students are Latino. Meanwhile, the state population is 15 percent and increasing. In the 18-to-24 age group, the Latino population is 19 percent.

This disproportionate representation of Latino students spurred a group of ACES faculty members to take action. Two years ago, Elvira de Mejia, professor in the Department of Food Science and Human Nutrition, sat down with a group of her peers and discussed a set of USDA calls addressing Latinos.

The meeting resulted in the creation of the Illinois Advocates for Latino Advancement in Science (I-ALAS) to meet needs of Illinois Latino students.

De Mejia said the group’s goal was to identify grants for Illinois Latino students, develop a model for increasing the Latino student population in ACES over the next five years, and find innovative ways to address the need for increasing the number of Latino students.

“Most of us in I-ALAS realize that at some point, it’s random chance that we have gotten to where we are today,” Villamil said. “So why not take the random chance out of the equation?”

Sandra Rodriguez-Zas, professor in the Department of Animal Sciences, believes the plan should start with faculty.

“We feel called to help,” Rodriguez-Zas said. “I think faculty members are the best people to start this project. You can wish and wish, but if faculty aren’t committed, these programs won’t happen. As Latino faculty, we understand the challenges these students face.”

I-ALAS finds ways to fund students’ educations

New Biology Fellows
- $662,836 National Science Foundation grant establishes a mentoring program for Latino undergraduates.
- Four cohorts, each comprising seven college sophomores and juniors, receive $15,000 fellowships for research and academic work for one year.
- Students may study plant and animal bioinformatics, quantitative genetics and plant breeding, statistical genomics, architecture of complex traits, food nanotechnology, biological system modeling, or statistics.

Multicultural Advocates in Nutritional Needs and Agriculture (MANNA)
- USDA grant pays for the undergraduate education of four qualified Latino students.
- Students must be enrolled in a major in the Department of Food Science and Human Nutrition.
- Each student receives a 12-week, intensive summer-research immersion experience, a mentor-guided academic year of research, and an optional second summer internship experience.
RAP aids in recruiting and retaining minority students

Recruiting minority and underserved students to the College of ACES in an effort to increase diversity is why the Research Apprentice Program (RAP) was first developed, but retaining students through to graduation is the program’s goal.

“RAP students who enroll in ACES stay,” said Jesse Thompson, assistant dean of academic programs, who has been involved with RAP since it began in the early 1980s.

Minority students who did not participate in RAP tend to change their majors at a rate of 40 percent. Almost 90 percent of former RAP students stay in their majors and graduate.

“Participation in RAP is also a good indicator of success in college. The students come in as freshmen having had an intensive introduction to math and science and with less anxiety about campus life. They already know some of the faculty, and they know where to go if they need help.”

Today RAP attracts over 50 talented high school students to the college each summer.

RAP has developed partnerships with industries for funding and to provide students research projects based on real-world questions. “This year, Kraft Foods contributed $100,000 to RAP,” said Thompson. Other corporate sponsors are Archer Daniels Midland, PepsiCo, and Pioneer Hi-Bred International.

“RAP has helped transform the college by increasing diversity significantly over the past 10 years. We have become stronger in our outreach efforts and have created more good-will in schools and communities throughout the Chicago area,” Thompson said. “And alums from the program have gone on to become engineers, marketing and research specialists, and even a dean at a university. Our students have stepped out and are achieving.”

For more information about RAP, visit summerprograms.aces.illinois.edu.

University of Illinois students garner titles at the national MANRRS conference

The University of Illinois chapter of Minorities in Agriculture Natural Resources and Related Sciences (MANRRS) brought home three champion titles from the 2011 MANRRS career fair and training conference in Overland Park, Kansas.

Derrick Rhodes, a junior in agricultural leadership and president of the U of I MANRRS chapter, won the social science division of the undergraduate research competition with a presentation analyzing lunasin in commercially available soymilk products and the implementation of an efficient method to isolate and purify it from defatted soybean flour. Elvira de Mejia, professor in the Department of Food Science and Human Nutrition, served as her mentor.

Two seniors from the Chicago High School for Agricultural Sciences participated in the Junior MANRRS impromptu public speaking contest. Lamar Rivers received first place honors, and DeJuan Garnett placed third.

Rhodes was also elected the national undergraduate vice president, representing region five. Region five is the largest and most active, with 12 university chapters in Illinois, Wisconsin, Indiana, Ohio, Nebraska, Michigan, and Minnesota.
A University of Illinois study proves that the way you prepare your broccoli matters and suggests that teaming broccoli with broccoli sprouts may double the vegetable’s anti-cancer effects.

“Broccoli, prepared correctly, is a potent cancer fighter—three to five servings weekly decreases cancer risk. To get broccoli’s full benefits, the enzyme myrosinase has to be present; otherwise sulforaphane, broccoli’s cancer-preventive component, doesn’t form,” said Elizabeth Jeffery, professor of nutrition.

According to Jeffery, many people destroy myrosinase by overcooking broccoli. And consumers who use broccoli powder to boost nutrition are also missing out, as supplements often do not contain the necessary enzyme.

“You can boost that powder’s effectiveness, though,” said doctoral student Jenna Cramer. “Broccoli sprouts contain lots of myrosinase. And broccoli powder contains the precursor to sulforaphane without the enzyme.”

In a pilot study, healthy men ate meals that contained either broccoli sprouts, broccoli powder, or a combination of the two. The researchers then measured levels of sulforaphane metabolites in their blood and urine.

“Three hours after feeding, there was almost a twofold increase in sulforaphane absorption when sprouts and powder were eaten together. We saw plasma and urine metabolites much earlier and at higher levels than when either was eaten alone,” Jeffery said.

Other foods that can be teamed with broccoli to enhance its benefits are mustard, radishes, arugula, and wasabi, Jeffery said.

“Try sprinkling broccoli sprouts on your broccoli, or serve it with a mustard sauce,” she suggested.

People who prefer to eat broccoli without sauce or sprouts should know that overcooking is the kiss of death for the important enzyme myrosinase.

“Steaming broccoli for two to four minutes is the perfect way to protect both the enzyme and the vegetable’s nutrients,” Jeffery said.

Frank Zhao landed a USDA grant for more than half a million dollars and gives credit to the ACES Research Academy for helping him get it. Zhao is a fellow of this unique program, designed to help new faculty develop successful careers.

“Being a principal investigator can be very stressful for a young faculty member,” said Zhao, an assistant professor in crop sciences. “The academy offered special sessions on grant writing and how to manage funds.”

Academy members meet once a week for about nine months, then take a group trip to Washington, DC to meet with program directors at federal agencies.

Elvira de Mejia, interim assistant dean of research and professor of food science and human nutrition, is the coordinator of the academy.

“When we were first developing the academy, we asked senior professors what kinds of support would have helped them when they were assistant professors, and we designed the program to meet those needs,” said associate dean of research Jozef Kokini. “We wanted to empower them with the tools they need to succeed as professionals.”

Juan Andrade and Patrick Brown are members of this year’s academy. “I’m looking forward to being in this group because as assistant professors we are all going through the same issues and can learn from each other,” Andrade said.

Brown said he hopes to improve in grant writing. “In my experience so far I’ve written and read lots of papers, but I haven’t read many grants, so reading them and learning how to write grants will be a big help to me in my career.”
Africa’s two elephant species

New research confirms that Africa has not one but two species of elephant. Scientists from the University of Illinois, Harvard Medical School, and the University of York in the United Kingdom used genetic analysis to prove that the African savanna elephant and the smaller African forest elephant have largely been separated for several million years.

The researchers, whose findings appeared online in *PLoS Biology*, compared the DNA of modern elephants from Africa and Asia to DNA that they extracted from two extinct species, the woolly mammoth and the mastodon. Not only is this the first time that anyone has generated sequences for the mastodon nuclear genome, but it is also the first time that the Asian elephant, African forest elephant, African savanna elephant, extinct woolly mammoth, and extinct American mastodon have been looked at together.

“Experimentally, we had a major challenge to extract DNA sequences from two fossils—mammoths and mastodons—and line them up with DNA from modern elephants over hundreds of sections of the genome,” says Nadin Rohland of the Department of Genetics at Harvard Medical School.

The research showed that forest and savanna elephants from Africa—which some have argued are the same species—are as distinct from each other as Asian elephants and mammoths.

Previously, many naturalists believed that African savanna elephants and African forest elephants were two populations of the same species, despite their significant size differences. The savanna elephant has an average shoulder height of 3.5 meters, and the forest elephant 2.5 meters. The savanna elephant weighs between six and seven tons, roughly double the weight of the forest elephant.

DNA analysis revealed varying ranges of genetic diversity within the species. The savanna elephant and woolly mammoth have very low genetic diversity, Asian elephants have medium diversity, and forest elephants have very high diversity. Researchers believe that this is due to varying levels of reproductive competition among males.

“We now have to treat the forest and savanna elephants as two different units for conservation purposes,” says Alfred Roca, assistant professor in the U of I Department of Animal Sciences. “Since 1950, all African elephants have been conserved as one species. Now that we know the forest and savanna elephants are two very distinctive animals, the forest elephant should become a bigger priority for conservation purposes.”

Eat a Rainbow

The Doris Kelley Christopher Family Foundation’s Food and Family Program partnered with the City of Urbana’s Market at the Square and Sprouts at the Market to present “Eat a Rainbow.”

Over 120 children up to age eight participated in healthy eating activities, including tasting fruits and vegetables. Students from the Family Resiliency Center’s undergraduate research course helped staff the event.
Splashing around in a swimming pool on a hot summer day may not be as carefree as you think. A recent U of I study links the application of disinfectants in recreational pools to previously published adverse health outcomes such as asthma and bladder cancer.

Each year, 339 million visits take place at pools and water parks across the United States. Not only is swimming fun, but it’s also the second most popular form of exercise in the country. Because of this, disinfection of recreational pools is critical to prevent outbreaks of infectious disease.

However, Michael Plewa, U of I professor of genetics, said negative outcomes can occur when disinfection byproducts form reactions with organic matter in pool water.

Pool water represents extreme cases of disinfection that differ from the disinfection because it’s continuously exposed to disinfectants.

“All sources of water possess organic matter that comes from decaying leaves, microbes, and other dead life forms,” Plewa said. “In addition to organic matter and disinfectants, pool waters contain sweat, hair, skin, urine, and consumer products such as cosmetics and sunscreens from swimmers.”

These consumer products are often nitrogen-rich, causing concern that they may contribute to the generation of nitrogenous disinfection byproducts. When mixed with disinfectants, these products may become chemically modified and converted into more toxic agents. These disinfection byproducts can mutate genes, induce birth defects, accelerate the aging process, cause respiratory ailments, and even induce cancer after long-term exposures.

In this study, collections from public pools and a control sample of tap water were evaluated to identify recreational water conditions that could be harmful.

Results proved that all disinfected pool samples exhibited more genomic DNA damage than tap water.

The best method to treat swimming pools is a combination of UV treatment with chlorine,” Plewa said.

Organic carbon should be removed prior to disinfection when the water is being recycled, he said. Swimmers should be reminded about the potential harm caused by urinating in the pool and to shower before entering the water.

Research links recreational pool disinfectants to health problems

Boy toddlers need help with negative emotions

The way you react to your two-year-old’s tantrums or clinging may lead to behavior problems, and the effect is more pronounced if the child is a boy who often displays such negative emotions as anger and social fearfulness, reports a U of I study.

“Young children, especially boys, need their parents’ help working through angry or fearful emotions. If you punish toddlers for their frustration or act as if their fears are shameful, they may internalize those emotions,” said Nancy McElwain, a professor of human development.

McElwain investigated two types of parental reactions to negative emotions. One was minimizing them—a parent might say, “Stop behaving like a baby.” Another was punishing the child for these emotions—sending the child to his room for crying, or taking away a privilege.

Moms and dads who punish their kids for fears and frustrations were more likely to have children who were anxious and withdrawn. The effect was especially pronounced for boys who showed higher levels of negative emotions.

“When parents punish their toddlers for becoming angry or scared, children learn to hide their emotions because they know they’ll face negative consequences,” she said.

The researcher is intrigued that little boys were especially affected when they’re not supported during times of fear or frustration.

“In our culture, boys are discouraged from expressing their emotions. If parents punish these behaviors, the outcome may be especially detrimental,” she said.

McElwain said that parents can help children learn how to handle their emotions.

“It’s best if parents help children work through their emotions, giving them comfort and support, instead of sending them to their room to work through them on their own,” she said.
Life after bankruptcy

Declaring bankruptcy was once a last-gasp solution, but in this new millennium of economic uncertainty, it has become a common option for people who are in deep debt. The question is, can they learn from their mistakes, change their behavior, and recover? A recent study says, yes, with counseling and education.

A multiphase bankruptcy study was conducted by economist Angela Lyons, in partnership with Money Management International. The study measured the impacts of the counseling and education requirements established by Congress in 2005 by tracking debtors through the bankruptcy process.

“We looked at about 4,000 debtors across the United States who filed for bankruptcy,” said Lyons. “We learned that the counseling and education requirements appear to be serving their intended purpose and are likely viable mechanisms to help debtors deal with their financial situation and get the fresh start that they need.”

Lyons said the effects are holding over time. “The participants were carrying out their improved financial behaviors, even 12 months later.”

Some of the behaviors emphasized during the counseling and education were related to setting short- and long-term financial goals; saving money each month; tracking income and expenses; reducing impulse spending; cutting unnecessary expenses; paying bills on time each month; and managing credit wisely, such as by maintaining a debt-to-income ratio below 20 percent.

“Following bankruptcy, many debtors were also starting to work toward longer-term goals, such as saving more, starting an emergency fund, or buying a car or home,” Lyons said. Lyons said the results of this study provide insight into whether the counseling requirement is working and how it is helping debtors improve their financial situations, learn from their mistakes, and go on to make sound financial decisions.

Researchers take next step in biowaste conversion to crude oil

Research at the U of I to convert swine manure into oil has expanded to include more efficient technologies that use a variety of materials to produce hydrocarbon fuels.

Now human, animal, and food processing waste, as well as algae, are being used in a process called hydrothermal liquefaction (HTL). During HTL, high-moisture biowaste is subjected to elevated temperatures and pressures in order to break down and reform the biowaste into a crude oil. The conversion mimics the natural geological processes that produced fossil fuels and allows for the conversion of a wide range of feedstocks.

Yuanhui Zhang, a professor in agricultural and biological engineering, said that after the biowaste is converted, the wastewater still contains nutrients, such as nitrogen and phosphorus, that can be used to grow algae. The algae are then fed back into the HTL reactor, as a sole feedstock or as an additive, to be converted into additional crude oil.

“This synergistic process is extremely advantageous,” said Zhang, “because it brings together two rivals, energy production and environment protection, to complement rather than compete. We clean the wastewater, capture the carbon, and convert it into biomass and produce more crude oil. That’s why our research theme is called E2 Energy—Environment Enhancing Energy. We can produce the energy, and at the same time, enhance the environment.”

Zhang said they are also studying the chemistry of HTL.

“Biowaste and algae have the potential to completely replace petroleum,” Zhang concluded. “That is the goal.”
Health effects of botanical estrogens

An ongoing research initiative into the health effects of botanical estrogens will get an $8-million boost from the National Institutes of Health.

The Botanical Research Center, based at the University of Illinois, will draw on the expertise of a multidisciplinary team of researchers to address many unknowns associated with use of botanical estrogens. These plants and plant-based compounds are often marketed as aids to prevent cancer, promote healthy aging, or relieve menopausal symptoms. Researchers from the U of I, the University of Mississippi, Oregon State University, and the Food and Drug Administration’s National Center for Toxicological Research will contribute to the five-year effort.

“The types of botanical estrogens that are being marketed are getting more and more potent,” said William Helferich, a U of I professor of food science and human nutrition and director of the new center. “We want to see if they are effective or are detrimental.”

Many women take plant-based estrogens that are advertised as natural—and, they presume, safer—alternatives to hormone-replacement therapy.

Research into the efficacy and safety of these estrogenic compounds has yielded mixed results. Consumption of some plants or extracts appears to reduce the risk of certain cancers or minimize some of the unpleasant symptoms associated with menopause, while others have no effect. Still other studies, some of them conducted at Illinois, have found that certain phytoestrogens may actually induce cognitive problems, increase the recurrence of breast cancer, and interfere with breast cancer treatment.

Huge discoveries start with tiny technology

Jozef Kokini’s description of the ways nanotechnology can be utilized in food science and agriculture is reminiscent of Fantastic Voyage, the 1966 science fiction film where a nuclear submarine and a team of researchers are miniaturized and injected into a patient’s bloodstream. But Kokini is talking about real science, not fiction.

“Nanotechnology has already found applications in pharmaceutical delivery systems and building better IT chips. Now we’re bringing agriculture into the arena,” said Kokini, associate dean of research in the College of ACES.

Instead of a minisubmarine sailing through a human vein, Kokini describes how nanoparticles carry nutrients through the roots of a corn plant.

“Corn growers will be able to encapsulate nutrients in nanoparticles,” he said. “Using nanotechnology, more of the nitrogen added to the soil is released when the plant needs it, avoiding overfertilizing and reducing the cost of the applications while increasing the effectiveness of the nutrients.”

Kokini served as one of the USDA’s advisors on nanotechnology. He is particularly excited about the research center at the University of Illinois recently created in partnership with the National Science Foundation—the Center for Agricultural, Biomedical, and Pharmaceutical Nanotechnology (CABPN).

The center is the result of an industry–university cooperative research center grant. At least 12 companies commit to a $25,000 annual membership fee, and the National Science Foundation adds an additional $125,000.

“Normally, you need a minimum of two universities to establish a center, but Illinois managed to get commitments from 14 companies on its own,” Kokini said. “So the University of Illinois is the only university to have a center on its own.”

The College of ACES and the U of I College of Engineering will collaborate on proposals for research projects in the center. Representatives from each of the member companies serve on a board that reviews all of the proposals and selects which ones will be funded and at what level.

“This is a natural fit for our institution because of our prominence in both agriculture and engineering,” said Robert Hauser, dean of the College of ACES. “The collaboration between ACES and the College of Engineering has gotten us off to a great start, and I believe that this partnership will create a leading research program in many areas of nanotechnology.”
$10 million granted to prevent crop loss

Archer Daniels Midland Company (ADM) awarded $10 million to establish the ADM Institute for the Prevention of Postharvest Loss at the U of I. The institute will work with farmers in the developing world to help preserve millions of metric tons of grains and oilseeds lost each year to pests, disease, mishandling, and other factors.

K.C. Ting, professor and head of the Department of Agricultural and Biological Engineering, said, “We need to find appropriate technologies for developing countries. Many of our solutions to these problems are technology- and facility-intensive, but in developing countries you have to provide solutions that match the local environment. The real challenge is to address and solve their problems in a way, and at a cost, that can be delivered to those producers within their infrastructure.”

Paul Ellinger, professor and head of the Department of Agricultural and Consumer Economics, said, “Assessing the economics of quality and quantity losses along the relevant supply chains will be essential in developing low-cost, sustainable solutions for improving handling, processing, and storage.”

ACES researchers will work with colleagues across campus in the College of Engineering and the College of Business to develop research projects to solve postharvest problems.

U of I professor of agricultural management Steve Sonka will serve as the institute’s faculty director.

Feeding beef cattle efficiently

Animal science faculty Dan Shike, Dan Faulkner, and Jon Beever are part of a multidisciplinary group of researchers who have received a $5-million USDA-NIFA Agriculture and Food Research Initiative grant to develop DNA-based technology to predict genetic merit for feed efficiency.

One of the major challenges of feed efficiency research is collecting and measuring individual feed intake, said Dan Shike, assistant professor in the Department of Animal Sciences. Cattle are fed in pens, so it’s difficult to determine individual intake, which is necessary to calculate efficiency.

“To complete this study, we need information on thousands of animals to have a cross-section of phenotypes,” Shike said. “With our state-of-the-art GrowSafe technology, we can obtain individual feed intake data within a pen setting.”

The team’s goal is to develop DNA-based technology that breed associations can use to develop expected progeny differences for feed efficiency.

“This research is critical to the future of the beef industry,” Shike said. “In order to produce the food demanded by the world on the same amount of land, we have to find ways to more efficiently utilize our available feedstuffs.”

Reducing the feed consumed per pound of beef produced directly reduces methane emission and manure production.

“Decreasing greenhouse gas emissions and developing a more sustainable system that’s ultimately a more profitable way to produce beef cattle is a win for everyone,” Shike said.

Tackling childhood hunger

Craig Gundersen, associate professor in the Department of Agricultural and Consumer Economics, will work with James Ziliak of the University of Kentucky Center for Poverty Research to coordinate a $5.5-million research program funded by the USDA to help alleviate childhood hunger in the United States.

The program will solicit external research projects. When they are completed, Gundersen and Ziliak will synthesize, summarize, and draw out the policy implications of the work.

“This summary will address the determinants of childhood hunger among low-income families, the identification of food insecurity for directed interventions, policy innovations to improve the effectiveness of food assistance programs in reducing episodic and persistent hunger, and implications for how complementary safety-net programs can be improved to eliminate childhood hunger in the United States,” Gundersen said.

“The problem of food insecurity increased by an unprecedented rate of over 30 percent from 2007 to 2008,” Gundersen said. “One key reason that rate remains stubbornly high is limitations in our understanding of the causes and the effectiveness of programs currently in place to alleviate food insecurity. This program will use integrated, cutting-edge research to explore the causes, consequences, and policy solutions to childhood hunger in the United States.”

Gundersen was also appointed this year as interim director of the National Soybean Research Laboratory in ACES.
University of Illinois Extension sharpens focus


University of Illinois Extension clients will see changes in some programs but not others when the boundaries of most of the organization’s units shift this summer.

Extension is reorganizing its field operations to reduce the number of administrative positions and bring educators closer to the people they serve, according to Robert Hoeft, interim associate dean and director of extension and outreach in the College of ACES.

And although the reorganization was prompted by a recurring $7-million shortfall in state funding, Hoeft said the end result will be educational programs that are more focused on demonstrating impact and meeting high-priority societal needs.

Multicounty units becoming the norm

With the exception of Cook County, all local Extension operations will become part of multicounty units. Most units will be made up of three to five adjacent counties that share a county director, several educators, fiscal support staff, and other resources.

These “economies of scale” will allow more local dollars to be spent on educational programming and fewer on overhead.

Hoeft said administrators and local Extension Councils kept several questions in mind as they made staffing decisions for the units throughout Illinois.

“For example, in which program areas will locally delivered educational programs have the greatest impact on people’s lives and communities?” he said. “In which areas does the University have a strong research base that can provide the foundation for those programs? And how are our clients’ needs and habits changing when it comes to seeking information and education?”

Answers to those questions are determining which Extension programs remain “high-touch” and which ones go “high-tech.”

Two of Extension’s most popular programs—4-H and Master Gardeners—are examples of programs that will remain face to face as they continue to rely on local volunteers for leadership and program delivery.

“Our local staff still will work with volunteers to be sure they have the resources they need to provide a positive educational experience for 4-H’ers and Master Gardener clients,” Hoeft said. “And no matter where the unit’s main office is located, we will do all we can to ensure that our volunteers are not inconvenienced by the structural changes we’re making.”

The addition of “metro 4-H educators” is one exciting development to come out of the reorganization, Hoeft said.

Particularly in rural areas, multiple generations of some families have been involved in 4-H. “It’s a family tradition; the kids join 4-H because Mom or Dad and some of the grandparents were involved,” Hoeft said. The metro 4-H educators will work with families and volunteers in some of the more urban areas downstate and in northeastern Illinois, so that more youth who don’t come from a traditional “4-H family” can begin to enjoy the lifelong benefits of 4-H.

Hoeft said some recent research at Tufts University has documented that 4-H members do better in school, are more community-oriented, and are more likely to excel in math and science than young people who are involved in other youth-serving organizations.

“There’s something demonstrably different about how 4-H affects young people over the long haul,” Hoeft said. “As a public university, we have an obligation to see that kids from all backgrounds have an opportunity to tap into the benefits of 4-H.”

Other Extension programs will be more high-tech than high-touch, because the Internet has changed how information and education is accessed. When consumers have a need or a problem that needs to be solved, most are no longer willing to wait for answers.

“With Extension’s web-based resources and other e-technologies, we will be better able to take advantage of ‘teachable moments,’ ” Hoeft said. “We can capture those opportunities to
deliver education when people have a specific need, are looking for reliable, research-based answers, and are receptive to what Extension educators and specialists have to say.”

**Focus on societal needs**

Just as Extension’s program-delivery methods are changing, so are certain local program emphases. Thirty or more years ago, there were important differences between the needs of rural and urban audiences, Hoef said. Those differences have all but vanished today.

“Whether you live in Chillicothe or Chicago, you want your children and grandkids to develop skills that will help them to compete in the global job market. You’re concerned about keeping your community strong and viable, about controlling energy costs, about living a long and healthy life, and about having access to safe, fresh, affordable food.

“These aren’t rural vs. urban issues; they’re societal issues,” Hoef said. “And with our campus’s research base, U of I Extension is well positioned to help people and communities meet those needs.”

Hoef cited the example of hunger and “food deserts,” a very real but largely hidden problem for many Illinois communities, both urban and rural.

“If we’re doing our jobs right, U of I Extension will be working with new audiences and new issues all the time.”

Urban food deserts result when supermarkets opt not to build in particular neighborhoods—often, low-income areas—and residents must rely on high-priced convenience stores, fast-food restaurants, and other sources of food that may not be especially healthy for their families.

Rural areas can have food deserts, too: large geographic areas may be served only by a gas station/convenience store. “As rural communities have lost their full-service grocery stores, many people have lost access to fresh, affordable food—especially people who live in poverty and older folks who can no longer drive to larger communities to shop,” Hoef said.

Extension alone can’t solve the problem of food deserts in either urban or rural areas, he said. “But rural and urban communities are discovering that the kind of education Extension provides can go a long way toward helping them address the problem in a way that will provide greater food security for everyone in the community.”

Educators in the new Extension program area of small farms and local foods will provide the information growers need to become sustainable producers of fresh foods for local markets.

Extension’s educators and specialists in commercial agriculture will still work with producers of corn, soybeans, pork, beef, and other commodities, but the ways they interact with larger-scale farmers are changing. Hoef said commodity producers want to talk with the experts—researchers located on campus and at research stations around the state—and interacting with those experts by email, on the phone, and at events around the state has become the norm.

“Whether the subject matter is agriculture, diet and health, green energy, or something else, many of our program audiences’ needs and expectations are different now. They want the very best, latest, most reliable information and education. They want to hear about it from people they trust, people who are actually doing the research. And they want the opportunity to help shape the research priorities on campus and elsewhere.”

Hoef said Extension programs’ impact on societal issues will be the measure of the organization’s success.

“If we’re doing our jobs right, U of I Extension will be working with new audiences and new issues all the time.”

**Extension on the Web**

Many U of I Extension resources are available “24/7” on the Internet, offering just-in-time education on a variety of useful topics. And most are mobile-friendly!

**U of I Extension homepage**

Find your local office’s website, or zero in on the topic of your choice. www.extension.illinois.edu

**Lawn and garden websites**

Sixty-seven different horticulture websites on topics from composting to designing perennial gardens. web.extension.illinois.edu/state/hort.html

**Schools Online**

Fun, interactive K-12 curricula on topics such as plant sciences, weather, earth science, and getting along with others. web.extension.illinois.edu/state/schools.html

**Farmdoc**

Decision and risk-management tools for ag producers, landowners, investors, and policy makers. www.farmdoc.illinois.edu/

**Nutrition and wellness websites**

Sound information and advice for people with diabetes, and much more. web.extension.illinois.edu/state/nutrition.html

**EZregs**

Help with Illinois’ complex agricultural and horticultural regulations. web.extension.illinois.edu/ezregs
From green clover to red carpet: Former Illinois 4-H’er competes in Oscars design contest

Miriam Cecilia Carlson, a former Illinois 4-H member from Winnebago County, was one of nine fashion designers chosen to compete in the 2011 Oscars Designer Challenge.

“The first project that I completed for 4-H was a skirt, and I won first place for it,” Carlson said. “I learned to sew according to very high standards of quality, and these skills have stayed with me through college and starting my own clothing line, ‘miriam cecilia’.”

According to Margaret Larson, county extension director for Jo Daviess, Stephenson, and Winnebago counties, “Miriam is a great example of a 4-H’er who is doing something outside of agriculture and has already gone further in her field than most of us dream of.”

Carlson recently moved into her own studio and showroom, where she will continue working on her clothing line, “miriam cecilia,” as well as create custom pieces for clients.

“I have always been ahead in design because I learned to sew at a young age,” Carlson said. “I can thank 4-H for helping me to realize my skills in fashion design and become a confident designer.”

4-H’ers garner support for a specialty license plate in Illinois

Since 2008, the Illinois 4-H Foundation has been working to create a 4-H specialty license plate in Illinois. Now, 4-H’ers across the state are attending community meetings, running booths at county fairs, and writing letters in an effort to get the license plates on the road.

Governor Pat Quinn signed legislation officially endorsing the 4-H license plate. Now comes meeting the state law, which requires 1,500 current Illinois license holders to request the plate and donate $25 to the initiative—all of which will support statewide 4-H youth programming.

Once the plate is in production, the Illinois 4-H Foundation will receive a portion of the initial purchases and continuing renewals of the plate.

“This license plate will not only give more visibility to the 4-H organization and 4-H Clover, but also serve as an ongoing fundraiser for Illinois 4-H youth programs,” said Angie Barnard, director of the Illinois 4-H Foundation.

For more information, visit 4hfoundation.illinois.edu/licenseplateinfo.
ACE senior mentored by distinguished alumnus

George Witchek knows firsthand the collegiality of U of I alumni. Witchek, a senior in the Department of Agricultural and Consumer Economics focusing on markets and management, first spent a day with Bo Zhang, PhD ’99 Agricultural Engineering, in April 2009. Zhang was on campus to receive an award, and Witchek was the student chosen to serve as his host. Months later, when Witchek decided he would like to serve an internship in China, he called Zhang.

“Dr. Zhang was very willing to help me,” said Witchek. “He arranged for me to work for Mr. Yao, a colleague of his, at Match-Well Electrical Products in Changzhou.”

Witchek spent two months with the company as a global sales intern in the summer of 2010. “Match-Well sells pressure switches, fan motors, and air conditioners,” said Witchek. “I would call clients in the U.S., Western Europe, and Australia to check on their orders. They were very comfortable talking with an American, and I think I helped enhance the relationships Match-Well had with those clients.”

Witchek also monitored the inquiries on the Match-Well website. “I would take an inquiry to one of the company engineers and ask ‘Can you make this?’ ‘No, but I can make this.’ I’d take that back to the client, they would say ‘yay’ or ‘nay,’ and we’d go from there.”

Although Witchek spoke very little Chinese (“just enough for survival”), he found opportunities to get out and meet the people where he lived. “I played mahjong with my neighbor, even though we couldn’t really communicate. There was a basketball court twenty minutes from my place, so I’d play basketball. I couldn’t really talk with anybody, but they knew I would show up to play.”

In July, Witchek spent a week with Zhang and his family, traveling by train to Lanzhou. The train ride was long (over 26 hours) but comfortable, said Witchek, and it enabled him to see much of the country. “Not many people go west, because all the big cities—Beijing, Shanghai, Hong Kong—are on the east coast. While we were in Lanzhou, our driver took us two hours away to a village in a very poor area, where I literally saw a donkey pulling a plow, with a farmer and his wife following behind, dropping in the seed. Bo wanted me to see that, and it was a very eye-opening experience.”

Witchek is grateful for the opportunity he was given by Mr. Yao and Zhang. “Mr. Yao and his family were always by my side. In addition, Bo was a great mentor. As busy as he was, he was always there for me; he always wanted to know how I was doing. It was great to get to know him.”

ACES grad develops food products

As an “innovationscientist” for McCain Foods, College of ACE S grad Landon Terry uses consumer insights and trend forecasting to develop new food products. He’s so good at it, he has won the Innovation Award two years running at a Chicagoland competition.

The scientist credits his University of Illinois experience with preparing him for his profession. “Being able to perform under pressure, provide a solid presentation to my company’s leadership team, and develop strategies to overcome obstacles—these all stem from my U of I education,” he said.

Terry praised ACE S’ well-rounded food science program. “Many of my colleagues didn’t have a sensory and food analysis course. Because I did, my transition to R&D and graduate studies was easier,” he said.

Even when he travels internationally, Terry meets people who are familiar with the U of I’s reputation for top-notch research.

“It’s certainly a benefit that I graduated from one of the top institutions in the country,” he said. “But two characteristics set the U of I apart for me. I loved that the deans and my department head knew my name and always made time to meet with me.

“And the U of I works hard to support its alumni through free webinars, skills training, and events that keep our skills relevant.”

“The friendly, supportive staff and the College’s focus on diversity domestically and abroad convinced me the ACE S’ food science program was the place for me,” he said.

For a big-university experience with a small-college feel, Terry said, you can’t do better than the College of ACE S.
Ag communications program strengthened in its 50th year

The year 2011 is a milestone one for the agricultural communications program at the U of I. Not only will the program celebrate its 50th anniversary, but it will also establish the first endowed chair in agricultural communications and an official partnership with a media college.

The College of ACES and the College of Media have worked together to offer curricula in journalism, advertising, and science to agricultural communications students since the program’s creation in 1961.

After three years of planning by agricultural communications faculty, students, and alumni and deans of both colleges, that partnership was formalized this year.

“One of the main reasons for establishing an official partnership is because the problems that face agriculture and the environment today are very complex. Solving those problems will require an interdisciplinary approach,” said Katie Abrams, visiting assistant professor in agricultural communications. Agricultural communications students will be considered students—and alumni—of both colleges.

“Students will now have access to courses, internships, career services, scholarships, student organizations, and study abroad opportunities in both colleges,” Abrams said. “The partnership will also give agricultural communications students improved access to faculty members in the College of Media, who have expertise in mass communications.”

The two colleges are also partnering to raise $2 million for an endowed chair in agricultural communications.

Named for a renowned U of I professor emeritus of agricultural communications, the James F. Evans Endowed Chair in Agricultural Communications will designate a position for a new faculty member to teach agricultural communications curricula in both colleges.

“The endowed chair will provide the agricultural communications program with prestige, sustainable finances, and university support,” said Lyle E. Orwig, chairman of the steering committee for the endowed chair and a program alumnus.

The effort began in the fall of 2009 with an alumni campaign that raised nearly $750,000. Now the committee is seeking donations from corporate sponsors and hopes to reach its goal by this fall, he said.

And to celebrate these achievements? According to Abrams, agricultural communications alumni and faculty are planning to host a surprise event in the 2011–12 academic year.

To help plan the celebration or support the James Evans Endowed Chair, contact the ACES Office of Advancement at 217-333-9355 or email acesadvancement@illinois.edu.

Yuanhui Zhang named Innovento r Professor in Engineering

The College of Engineering and the College of ACES announced the investiture of Professor Yuanhui Zhang as the Inventor Professor in Engineering, an endowed chair established by Kent and Carol Schien, benefactors of ACES for over 20 years. Mr. Schien graduated with a mechanical engineering degree from the University of Illinois and founded Inventor in 1996.

Zhang is a professor and associate department head in the Department of Agricultural and Biological Engineering as well as an affiliate professor in the Departments of Mechanical Science and Engineering, Bioengineering, and Civil and Environmental Engineering.

Zhang is internationally known for his pioneering research in biomass conversion to energy. Zhang was the first researcher to develop a hydrothermal liquefaction reactor and process that converts 70 percent of swine manure into a crude oil (see page 13). His work has been published in numerous prestigious scientific publications and featured in national and international media.

Zhang has also made major contributions to indoor air quality research. His team has developed and continued research on aerodynamic filter-less air cleaning and on three-dimensional, near-real-time volumetric particle tracking velocimetry for room airflow measurement and modeling.

Zhang is also an active and highly motivated teacher. Fifteen doctoral students and 14 master’s students have completed their degrees under his supervision, and his textbook, Indoor Air Quality Engineering, is widely used in this area of engineering.

Zhang has received numerous awards, including Fellow of the American Society of Heating, Refrigeration and Air-Conditioning Engineers; Henry Giese Structure and Environment Award from the American Society of Agricultural and Biological Engineers; and Bliss Faculty Scholar, Everett Teaching Excellence Award from the College of Engineering at the University of Illinois.
Alum Albrecht supports Zamorano internships

After visiting Zamorano University in Honduras several years ago, ACES Award of Merit winner Jim Albrecht came away with a profound respect for the students’ work ethic and the institution’s philosophy of learning by doing.

Albrecht, who received his Ph.D. from the Department of Food Science and Human Nutrition (FSHN), was inspired to make a generous gift that would support Zamorano student internships in the program that shaped his successful career.

This semester three Zamorano interns working in FSHN are supported by a generous gift from Albrecht. A fourth intern is working in ACES’ Department of Natural Resources and Environmental Sciences. These interns are in the second group that Albrecht has sponsored, and a third cohort will arrive on campus in January.

Luis Rolando Muñoz Romero is learning about the metabolism of fatty acids in the laboratory of professor Manabu Nakamura.

Nakamura said mentoring Romero has been enjoyable for both of them. “In this Internet age, understanding other cultures is important.”

Students thank donors

Every semester, at least 20 students in the College of ACES dedicate an evening to call donors and express appreciation for their support during monthly “thanking drives.”

“These drives are an opportunity for students to have meaningful conversations with alumni and donors,” said Amy Davis, senior in animal sciences and college relations chair of the Student Advancement Committee (SAC), which organizes the drives. “Donors enjoy speaking with students and hearing that their contributions are actually benefiting someone at the college.”

“The SAC pairs students with alumni who have a similar educational background and scholarship recipients with the donors who funded them,” said Stacey Cole, assistant director of development in the Office of Advancement and SAC adviser.

“We’re calling for more support, but really the students want to express gratitude for their generosity,” Cole said.

2011 College of ACES 
Corporate Partners

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CGB Enterprises
Farm Credit
Illinois Farm Bureau
Monsanto
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ACES Alumni Association
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Corn Marketing Board
Cory Craig Auction Service
Dekalb
Doug McCain’s Gourmet Barbeque Sauce
Dr. Robert Easter
Eckert’s Orchard
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Farm Progress Companies
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Dr. Robert Hauser
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Illinois Beef Association
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National Soybean Research Laboratory
North American Midway Entertainment
Orion Samuelson
Pioneer Hi-Bred International
Prairie Farms
Rex Evans Bedding and Feed Supply
Werner Angus Farms
Dr. Richard Wheeler
Grant funds child obesity prevention

A five-year, $4.5 million USDA grant to University of Illinois researchers will establish the Illinois Transdisciplinary Obesity Prevention Program (I-TOPP). Graduates will earn a Ph.D. and a master's degree in public health (MPH), both focused on preventing child obesity.

“This new program allows us to develop novel hypotheses and approaches as researchers come together from their individual areas of expertise to solve the problem of child obesity,” said Sharon Donovan, the Melissa M. Noel Professor in the Department of Food Science and Human Nutrition and I-TOPP director.

Students will be taught to think broadly about child obesity because research has shown that no single approach adequately addresses the problem, said Donovan. The project team involves investigators from five colleges and seven departments.

“None of us has the expertise to cover the entire landscape,” Donovan noted.

I-TOPP scholars will benefit from a blend of transdisciplinary and translational research. The new degree will integrate nutrition, child development and family studies, physical activity, public health science and practice, economics, practices in child care centers, and the effects of media. Students will develop and test interventions to prevent childhood obesity, Donovan said.

“By combining training in research and public health interventions,” Donovan said, “these students will be qualified to develop, implement, and evaluate programs targeting childhood obesity prevention.”

Rodney Johnson, director of the Division of Nutritional Sciences (DNS) and one of I-TOPP’s three co-directors, is excited to be a part of the program.

“For more than 40 years, DNS has facilitated interdisciplinary nutrition-related education and research. This new program, which aspires to address one of society’s great challenges, is consistent with DNS goals,” he noted.

David Buchner, I-TOPP co-director and head of the U of I’s MPH program, agreed that the result will be professionals trained to address one of the country’s urgent public health problems.

According to I-TOPP co-director Barbara Fiese, the program has been set up in a very deliberate way to give students multiple advisers.

“We can’t yet envision the research programs of the next generation of scientists. They’ll learn to ask questions and think in ways that we haven’t been trained to do. This program puts us on the cutting edge of what graduate education should look like,” Fiese said.

“The Abby & Ellen Show”

From riding the bus to class to getting ready for a dance, two ACES students are determined to show prospective students just how fun college life can be.

“The Abby & Ellen Show” is produced weekly by senior Abby Coers and freshman Ellen Reeder, both students in agricultural communications.

“Our goal is to increase awareness of student life in ACES and visually show what the college has to offer,” Coers said. “We know that recruiters like Dean Emmert can hand the information to students and talk about classes, but I think it’s valuable to actually watch peers living the student life.

“Ellen and I are like Dean Emmert’s back-up dancers. He’s there to put on the show and get the information out, but we’re supporting his words and showing students the ‘fun’ side of campus instead of words on a piece of paper explaining majors, classes, and forms for getting scholarships.”

Reeder said college life is a lot of fun, and she hopes “The Abby & Ellen Show” will help students feel more at ease about beginning their ACES careers.

“I know that as a freshman, I was nervous about finding my place here,” Reeder said. “I want to show students all of the unique opportunities available to them in the College of ACES.”

Watch “The Abby & Ellen Show” at futurestudents.aces.illinois.edu/CampusLife/AbbyandEllen.
Illinois birds by the book

Illinois Birds: A Century of Change literally was 100 years in the making. The first comprehensive survey of birds in Illinois was conducted from 1906 to 1909. It was repeated from 1956 to 1958, and a technical book was written comparing the two surveys. When the 100-year anniversary of that first survey was approaching, ornithologists Mike Ward, Jeff Walk, Steve Bailey, and Jeff Brawn seized the opportunity to do a third survey and to write a second book, this time with 100 years of data, lots of pictures, and a broader appeal.

What’s changed birdwise in the past century? “Shrubland and savanna birds such as red-headed woodpeckers, brown thrashers, field sparrows, and bobwhites have been declining for about a century, and grassland birds such as pheasants, meadowlarks, dickcissels, and bobolinks have declined dramatically in the past 50 years,” said Ward, the book’s primary author.

If this downward trajectory continues, field sparrows and bobwhite are going to be in bad shape, said Ward. “Shrubland birds don’t need a lot to survive, just some messy shrubbery. Everything is so manicured today. If we don’t mow roadsides until July, that would serve as a good habitat for them.”

Ward said that stepping in now and making the two species a conservation priority will bode well for them in the future. “We know that conservation measures taken early in a species’ decline are much more effective than waiting until there are only a handful of individuals left. This survey, combined with the first two, gives us a really good handle on what the conservation priorities should be in the future,” Walk said.

Illinois Birds: A Century of Change is a 230-page, full-color book, published by the University of Illinois. It is available for $25 plus $6.25 for shipping; email birdbook@inhs.uiuc.edu to initiate an order.

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Research station in Monmouth doubles in size

With a portion of the proceeds from the sale of donated farmland, the University of Illinois purchased 80 acres of farmland less than one mile from its Northwestern Illinois Agricultural Research and Demonstration Center in rural Monmouth. That acreage, combined with an additional 80 acres that was purchased by a local citizen group, doubles the size of the original 160-acre Monmouth Research Center.

The land that was sold at auction was an unrestricted gift of farmland known as the Lucille Hart Sudbury endowment farm in Bureau County; it has been a source of revenue since it was bequeathed in 2004 to the University of Illinois.

“The proximity of the 80 acres of farmland to the Monmouth Research Center made it a very wise acquisition for the College of ACES,” said ACES Dean Robert Hauser.

Hauser said that the landowner, John Diffenbaugh, was also very supportive of the Monmouth Center and that his willingness to sell the adjacent farmland at this particular time will help the center continue to be sustainable.

At the same time, a different 80 acres near the center owned by Warren and Jeanne Spring also became available.

A grassroots group of concerned citizens formed the Northwest Agricultural Education Foundation a few years ago and raised the money to buy the land from the Springs. The foundation agreed to lease that farmland to the U of I for $1 per year and for it to be used for research activities.

“The foundation was created to preserve the research center,” said Les Allen, a local banker, farmer, and member of the foundation. “If the Monmouth Field Station ceased to exist, the loss would have a devastating impact on the western Illinois region and its agricultural producers. We’d lose 30 years of research if it closed.”

“The purchase of 80 acres combined with the creative efforts of the foundation has virtually doubled the center overnight,” said Eric Adee, superintendent of the research center. “With twice the land, we will have much greater capacity for both research and production.”