IOWA STATE UNIVERSITY
College of Agriculture and Life Sciences

STORIES

IN AGRICULTURE AND LIFE SCIENCES
SPRING 2009

Impact: Soil Quality

GRADUATE STUDENT LEADS NETWORK OF MINORITY STUDENTS

EXPERIENCED ENTREPRENEUR MENTORS STUDENTS AT ALMA MATTER

SOCIOLOGIST STUDIES COMMUNITY ACTION IN NATURAL RESOURCES

STORIES
IN AGRICULTURE AND LIFE SCIENCES

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IOWA STATE UNIVERSITY
College of Agriculture and Life Sciences

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IN MY HOUSE DIRT IS A FOUR-LETTER WORD.

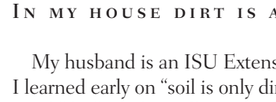
My husband is an ISU Extension field agronomist, and soil scientist by training. I learned early on "soil is only dirt if it's on the kitchen floor." And even then, the word "dirt" invokes rolling eyes from my husband.

I agree with him that soil is our greatest resource, and quite literally the bedrock of our society. I've taken enough science and agronomy courses to understand we need healthy soil for a healthy world. But, I must admit it is hard for those of us not elbow deep in it to truly appreciate it, to understand the miniature ecosystem teeming within, to comprehend the capacity of this immense resource and all its ability. Thankfully we have world-class researchers and teachers at Iowa State like Bob Horton, Michael Thompson, Jon Sandor, Andrew Manu and others to explore and explain this great resource. In the impact section you'll learn about soil's role in the carbon cycle and how researchers continue to uncover new information about soil to help preserve and enrich this resource while sustainably producing crops.

Our alumni always show us great hospitality by inviting us into their lives and we're thankful for it. And sometimes surprised. I was greeted by a rousing birthday serenade from my fellow Iowa Staters at Don Jordahl's annual alumni get-together last summer. It still makes me blush. Warm welcomes are business as usual with our alumni, especially at Don's.

Don's hospitality, Roger Underwood's investment in entrepreneurship and Roger Bruene's involvement in his Florida alumni club described in our alumni profiles are just a few ways alumni continue to serve the college. Others have set up memorial scholarships, bring kids for campus visits or talk about Iowa State with colleagues. Thank you! You are our greatest, most abundant resource for raising awareness about what we do in the college. If there's something happening at Iowa State that is especially meaningful to you, please let us know. And, please consider sharing our stories with a potential student, a neighbor or anyone who may find them interesting, useful or enlightening.

Kind regards,



Melea Reicks Licht

Photo: Bob Elbert

ISU administrators applaud the unveiling of the Carver sculpture outside the Seed Science building on ISU campus. Pictured are (from left) Betsy Hoffman, executive vice president and provost; Manjit Misra director of the Seed Science Center and the Biosafety Institute for Genetically Modified Agricultural Products; Jack Payne, vice president for extension and outreach; Paxton Williams, ISU alumnus and executive director of the George Washington Carver Birthplace District Association who performs a one-man play about Carver; and Wendy Wintersteen, dean of agriculture and life sciences.

THE SPIRIT OF GEORGE WASHINGTON CARVER LIVES.

I've been reminded of the great man and one of our greatest alums throughout this academic year.

Last fall, the college supported a traveling exhibit on Carver's life from Chicago's Field Museum, which was displayed at the State Historical Building in Des Moines.

In November, we dedicated a new addition to the Seed Science Center that included a life-sized sculpture of Carver, created by Christian Petersen in 1949.

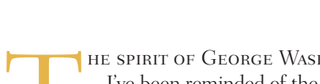
In February, the college sponsored OPERA Iowa's on-campus performance of "A Dream Fulfilled: The Saga of George Washington Carver," a musical for both children and adults highlighting Carver's life.

This spring, we filled the George Washington Carver Chair, a newly endowed faculty position made possible by the Iowa Legislature and the Raymond Baker Trust. Andrew Manu, profiled in this issue, is our inaugural Carver Chair.

Dr. Manu's plans as Carver Chair include developing young professionals, exploring soil and plant life to feed an ever-growing population, protecting natural resources and, in his own words, "developing energy from plants to wean us from our dependence on fossil fuels, as Dr. Carver would do."

This summer, our long-running Carver Internship Program once again will bring in high school and college students from around the country to conduct research with 16 faculty mentors.

Carver once said there's no short cuts, that "life requires thorough preparation. Veneer isn't worth anything." It's true. That's why the spirit of Carver will continue to inspire — and spur us forward.



Wendy Wintersteen
Endowed Dean of Agriculture and Life Sciences

ON THE COVER:
Agronomist Andrew Manu (right) digs into a soil pit at the Agronomy Farm with Nathan Anderson (top) and Lily-Love Topar (left). Manu teaches a large number of students in the college in the basic soils course Agronomy 154. Read more on page 20.

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RURAL SOCIOLOGIST ENJOYS THE LIFESTYLE SHE STUDIES

By Nick Van Berkum

Photo: Nick Van Berkum

Lois Wright Morton tends to her bees on her acreage near Ames. The rural sociologist studies how communities work together to address water quality issues and otherwise better their quality of life.

THE NATURAL INDEPENDENCE OF BEES AND THE QUIET serenity of maintaining beehives proves to be the perfect pastime for rural sociologist Lois Wright Morton. Her ten-acre farmstead, complete with a red raspberry patch, beehives and refurbished farmhouse, keeps her immersed in the lifestyle she studies.

Colleagues of Morton's appreciate her efforts when they receive a jar of honey or raspberry jam. Much like her list of hobbies, her research may seem like an eclectic grouping of interests, but is centered on the concept of "civic structure."

Morton researches how communities are organized and how people work together for the benefit of their communities.

"Of particular interest is how people connect with each other, identify their concerns and then proactively develop plans to move their community forward in ways that increase the quality of life," she says.

> "WE MUST FIND INNOVATIVE WAYS TO MANAGE OUR AGRICULTURAL LANDS TO PROTECT AND ENHANCE OUR FRAGILE NATURAL RESOURCE BASE WHILE PRODUCING AGRICULTURAL FOODS, FEEDS, FIBERS AND FUELS."

Morton is currently writing a book titled *The Citizen Effect: Pathways for Getting to Better Water Quality Outcomes*, which looks at how citizens can work together within their watershed community to address non-point source agriculture pollution.

Morton's book draws on research and extension activities conducted under two major grants, the Heartland Integrated Water Quality Coordination Initiative and Developing Leadership for Performance-based Environmental Management.

Both projects apply sociological concepts to strengthen relationships among community residents, farmers and technical watershed specialists to better address water quality issues on working agricultural lands.

"We look at how community leaders can become catalysts in their watershed and help each other better manage their productive agricultural lands in ways that also protect and enhance water quality," she says.

Morton has always been a member of an agriculture community. Originally a farm girl from Ohio, she moved to upstate New York, where she raised red raspberries, asparagus, flowers and her children on 30 acres. She worked as an extension associate at Cornell University while completing her doctorate in rural sociology. She received her master's and bachelor's from Syracuse University and Bowling Green State University respectively.

Iowa's incredible soil and Morton's dream of living on an Iowa farm to fulfill a passion for growing things are what brought Morton and her husband, Michael, to Iowa State in 1999. Plans dramatically changed in 2003 when Michael died. That Christmas, Morton's father gave her a beehive as a gift in hopes she would diversify her interests in her after-work hours. He gave her a new beehive every year for the next three years, and she was hooked.

Morton stresses that much of her academic success is directly related to her colleagues and graduate students, who she appreciates for their fresh perspective and enthusiasm.

Morton's future research will look at our natural resource base and the "co-production" of agricultural products and environmental services.

"Here in the Heartland, we must find innovative ways to manage our agricultural lands to protect and enhance our fragile natural resource base while producing agricultural foods, feeds, fibers and fuels," she says.

BAUM BATTLES NEFARIOUS NEMATODES LURKING IN SOIL

By Brian Meyer

Photo: Bob Elbert

Thomas Baum and colleagues are working to make plants more resistant to cyst nematodes, including soybeans, which suffer tens to hundreds of millions of dollars a year in yield losses in Iowa due to the pest.

THE MORE YOU KNOW ABOUT CYST NEMATODES, THE easier it is to characterize them.

Villainous.

The microscopic cyst nematodes are devastating plant parasites that transform plant cells into elaborate feeding machines. They infect many cultivated plants. In Iowa, the soybean cyst nematode is the bane of the nation's leading soybean producing state, with tens to hundreds of millions of dollars a year in yield losses.

Worldwide, plant-parasitic nematodes are blamed for an estimated $125 billion in annual yield losses to crops. Most hurtful is how the parasite impacts people who depend on a good harvest just to survive.

Heinous.

Thomas Baum, professor and chair of ISU's plant pathology department, was a fungi man before being introduced to nematodes 20 years ago. After two decades, he has grudging admiration for their biology, but few kind words.

"The worm has a needle in its head like a hollow syringe. It sticks this stylet into a plant cell and the cell changes. Something's secreted from the syringe into the cell," he says.

Discovering that "something" has been slow, tedious work over more than a decade by a team of scientists at Iowa State, University of Georgia and North Carolina State University. "Our biggest hurdle was to understand those secretions," Baum says. "We now know that more than 60 proteins are part of that piercing."

Baum and colleagues now have a better understanding of how the nematodes change the cell wall. They're writing up new findings on the way nematodes suppress a plant's immune system.

Some of the proteins in the secretions work like sledgehammers to get into a plant's roots. Once inside, the proteins change tactics and become a "gentle giant," says Baum.

There's good reason why scientists call these parasitism proteins "effectors."

Underhanded.

"Plants have defenses, but the nematode's tricky. It turns off the plant's defenses. The plant tries to fight back, but the nematode whispers sweet lies. It's telling the plant, 'Relax. Nothing's happening.'"

Deceitful.

"The cyst nematode is considered one of the highest evolved kinds of plant parasitism. It doesn't kill the host plant. It needs living cells. It learns how to speak the plant's language and, subsequently, leads it down the wrong path."

The nematode can effectively counter most defensive moves the plant throws at it. Baum says the worm can alter signal transduction in the plant — the chemical language that communicates actions in plant development. The nematode makes those events faster, slower or turns them off — all to its advantage.

Nefarious.

Baum and his colleagues are working on the next front — how to make plants more resistant to those sweet lies.

One technique they're studying is RNA interference. RNA, present in all living things, is key in producing proteins and transmitting genetic information. In lab studies, they've found it's possible to make nematodes ingest plant RNA that turns the tables on the parasite disarming a key nematode gene.

"It's not perfect, but our studies show this technology is promising in reducing infection," Baum says. "It's a good start for plant resistance."

The research, which has been supported by Iowa's and the nation's soybean growers, the National Science Foundation and the USDA, may translate into a very different kind of vocabulary to describe the nematode. Like:

Ineffectual.

Photo: Clark Coffman

Jo Anne Powell-Coffman and her research group has developed a genetic model that allows for closer study of how animals adapt to changes in oxygen levels.

LOVE OF BIOLOGY LEADS TO FLOURISHING RESEARCH CAREER

by Ann Marie Edwards

Jo Anne Powell-Coffman had the steady hands of a surgeon, but her love of biology led her to pursue research.

"My college advisers encouraged me to consider a career in medicine, but I didn't enjoy working in a hospital," says Powell-Coffman, an associate professor of genetics, development and cell biology. "I was much happier working to decipher molecules and pathways that govern human health and animal development, and that has been the focus of my research career."

> "ONE OF OUR MAJOR GOALS IS TO LEVERAGE THE POWER OF GENETICS TO... PROVIDE INSIGHTS TO TREATMENTS THAT WILL IMPROVE HUMAN AND ANIMAL HEALTH."

Powell-Coffman, who grew up in California, received her bachelor's degree in animal physiology from the University of California-Davis and a doctorate in biology from the University of California-San Diego in 1993. After a four-year postdoctoral fellowship at the University of Colorado in Boulder, she joined the faculty at Iowa State University.

Powell-Coffman's research group at Iowa State has developed a genetic model system using a small worm, or nematode, called *C. elegans*. The worm allows them to study key regulatory networks that animals use to adapt to changes in oxygen levels. These networks have critical roles in normal development and in many disease states, including cardiovascular disease and cancer. Most of the funding for their research comes from the National Institutes of Health.

"One of our major goals is to leverage the power of genetics to learn how to manipulate oxygen-responsive molecules and pathways and to provide insights to treatments that will improve human and animal health," Powell-Coffman explains.

Her research group made discoveries that inform and influence the efforts of other scientists working to understand development or the ways in which cells respond to stress. For example, Powell-Coffman is working with Scott Moye-Rowley, professor of molecular physiology and biophysics at the University of Iowa, who is developing *C. elegans* as a system to understand how animals resist fungal pathogenesis.

Her love of teaching is integral to her research programs.

"My research group usually consists of eight to 10 people, and most of them are graduate students. They are each amazing and talented individuals. It is a real privilege to work with them and help them develop their independent career paths in science," she says.

In addition to her research, for the past two years, Powell-Coffman has contributed to the National Science Foundation-funded ADVANCE program on campus, which aims to increase recruitment and retention of women in scientific and technological fields.

"I am acutely aware of the challenges and choices that women encounter as they balance their commitments to research science and university education with the day-to-day responsibilities and rewards of family life," she says. Powell-Coffman is married to Clark Coffman, an assistant professor in the Department of Genetics, Development and Cell Biology. They have two children.

Powell-Coffman says, "I think programs like ADVANCE help Iowa State compete for the best talent in a changing world, and that, in turn, allows us to better educate our students and serve the community."

MICKELSON SHARES LOVE OF TEACHING WITH STUDENTS AND PEERS

By Ed Adcock

Photo: Bob Elbert

Steve Mickelson (fourth from left standing) talks with members of the Agricultural and Biosystems Engineering Learning Community, as they work on a quarter-scale tractor. He considers the learning community the most successful educational program in his 26 years at Iowa State.

Steve Mickelson got his passion for water quality growing up on his family's farm near Storm Lake.

"We experienced many severe storms when I was growing up," he says. "At that time we moldboard plowed everything, so I saw a lot of soil erosion taking place and thought, 'If I'm going to inherit this farm some day, I'd like there to be some topsoil left.'"

Mickelson ('82 agricultural engineering, '84 MS, '91 PhD) pursued an agricultural engineering degree in order to follow this passion. He worked on an undergraduate water quality research project with now-retired professor Jim Baker, who encouraged Mickelson to earn a master's degree.

Mickelson started his graduate work in 1982, and was hired on as an adviser and instructor at the age of 21. He jokes that he had to wear a tie so he wouldn't be mistaken as a student.

His love of teaching grew and a few years later he accepted a position in engineering that allowed him to teach and advise while working on water quality research.

Teaching is still his focus as director of Iowa State's Center for Excellence in Learning and Teaching (CELT). Mickelson is now a full professor of engineering in the College of Engineering. He also splits his time as co-director of ISU Learning Communities and associate chair of the Department of Agricultural and Biosystems Engineering, which is jointly administered by the College Agriculture and Life Sciences and the College of Engineering.

"CELT's role is to support, promote and enhance teaching effectiveness and student learning. In these tough budget times, we are looking at how to help faculty be efficient, effective and still engage students in learning," he says.

CELT offers programs for learning effective pedagogy, use of classroom technology and course management software; grants to support scholarly teaching and learning; faculty mentoring; and classroom observations. CELT programs include Preparing Future Faculty for graduate students who plan to teach and ISUComm that integrates communication instruction across the curriculum.

Mickelson is still active in the classroom. He teaches three agricultural engineering courses within the department's Learning Community, which groups students with similar interests as they proceed through their degree programs together. He said the program is a very effective retention program; parents and students see the value; and it increases student, staff and faculty engagement.

Mickelson credits CELT for providing the educational foundation Iowa State is known for: "As a land-grant institution, we're a cornerstone for educating future leaders who will help solve our energy, water quality, infrastructure, sustainability and food supply problems for future generations."

He thinks the current budget challenges will bring great innovations in teaching, not just due to new learning technologies, but also through new, creative pedagogy.

"It is great to work at a university where faculty and staff care so much about student success. It is times like these that cause us to work together to maintain the high academic standards ISU is known for," Mickelson says.

VANDERZANDEN JOINS MICKELSON TO LEAD CELT

Ann Marie VanDerZanden, associate professor of horticulture, will become CELT's associate director July 1. VanDerZanden joined Iowa State in 2003. She serves as an extension specialist for nursery and landscape horticulture in addition to her teaching duties.

CAREER SERVICES DIRECTOR HELPS STUDENTS REACH THEIR POTENTIAL

By Susan Thompson

Photo: Melea Reicks Licht

As director of career services for the college Mike Gaul oversees two annual career days including this fall event which drew more than 160 companies in 2008.

Mike Gaul understands the students who arrive at college unsure of what they want to do after graduation. He understands because he was one of them.

Gaul, director of agriculture and life sciences career services, grew up in a Chicago suburb. "My father had beehives on a nearby acreage and at one point he considered switching careers from personnel management to owning an orchard or dairy farm. I grew up a city kid, but I've always loved being outdoors," he says.

He earned a degree in biology at Luther College in Decorah. Not sure what to do next, he came to Iowa State and earned a master's in horticulture in 1986.

Gaul's future wife Kim was working in the horticulture department, a position she continues to hold today. They married and Mike was hired as an assistant greenhouse manager.

When Mike Chaplin became chair of the department, Gaul talked with him about wanting to do something more. "Horticulture was becoming trendy," Gaul says. Anticipating an influx of students, Chaplin created the Horticulture Resource and Career Center and put Gaul in charge.

Gaul visited high schools to recruit students and developed stronger ties with industry. He advised students and taught entry-level courses. The number of undergraduates in the department climbed from 90 to more than 300.

"It was tough to leave," Gaul says. "I tell students it's easy to get in a comfort zone and difficult to leave, although sometimes that's what's best for you."

Gaul had worked with Roger Bruene in the college career services office (see Bruene's story on page 7) to increase the number of horticulture-related companies participating in the college's annual career fair. When Bruene retired in 1998, Gaul stepped in.

"I wanted to continue the legacy Roger established, which was always putting students first," Gaul says. "We have the best students on campus, and we work in a great industry."

Recruiters say Gaul is a strong advocate for students. "Mike does a great job of understanding the type of candidates we need and makes sure we don't miss a potential fit," says Tim Heiller ('90 animal science), Elanco Animal Health sales representative. "He makes it easy for us to recruit effectively at Iowa State."

The biggest change in Gaul's time at the helm has been the role technology plays in a student's job hunt. For the past four years, Gaul's office has connected students and alumni with employers through the online Iowa State University Career Management System. About 12,000 companies are registered with the site.

The office's Web site also includes features on young alums and student internships, and provides details on career days, on-campus interviews, job openings, salary data, writing resumes and more.

Chad Meyer ('93 ag business) is client relations/communications director for MaxYield Cooperative. "Mike's office combines the best of both worlds in recruiting," he says. "You can use their Internet-based system to post jobs, and you can call Mike to personally discuss openings and who might be a good fit."

Meyer describes the effort Gaul and his team makes to prepare students for internships and career planning as "second to none. There is not another college we go to that has its students as prepared for internships and careers," he says.

CAREER PLACEMENT BY THE NUMBERS

More than 160 companies and 1,200 students participated in the 2008 fall career fair. In the three days surrounding the fair, 650 on-campus interviews were conducted. In 2008, Gaul added a spring career fair, with 100 companies and 400 students participating.

Statistics show 98 percent of recent Iowa State College of Agriculture and Life Sciences graduates were employed, pursuing advanced degrees or serving in the military within six months of graduation. Nearly 70 percent stayed in Iowa for their first jobs.

STORIES ONLINE EXTRA:
Visit the Agriculture and Life Sciences Career Services office online at: www.ag.iastate.edu/stories.

FORMER CAREER SERVICES DIRECTOR NETWORKS WITH ALUMNI IN RETIREMENT

By Ed Adcock

Roger Bruene ('56 agronomy) wasn't into golf or gardening. So when he retired as director of college career services in 1998, he moved 80 boxes of papers from his office in Curtiss Hall to a storage unit with good intentions to go through each box. How has his one-box-a-month plan worked out?

"It's now 10 years later and I still have the storage unit which is a bit troublesome, since I do pay rent on it. Anyhow, I still haven't brought a box home," Bruene says.

Photo: Bob Elbert

Roger Bruene served as director of college career services for decades and created the first Ag Career Day in 1975.

The experience taught him a valuable lesson, which he passes on to others facing retirement: "Things you didn't like to do before you retired, you probably won't like to do after you retire."

So what does Bruene like to do? He and his wife, Barbara who retired from Iowa State's College of Design when he did, have been busy traveling and learning. They have participated in several Elderhostel programs and College for Seniors classes offered by the Iowa State Alumni Association. They also visit their children and grandchildren in Des Moines and Seattle and spend winters near Fort Myers, Fla.

While in Florida, the Bruenes are active in an Iowa State alumni group for which they currently serve as co-chairs with Dennis ('56 animal science) and Mary Lu Johnson. The group of more than 100 mostly retired members hold ISU basketball game watches and an annual brunch.

When he's back in Ames, Bruene visits campus frequently. And he always tries to attend Ag Career Day, an event he helped create and is known for. He compliments Mike Gaul, his successor as career services director, for his work at growing the event.

"The impact of working with students was very dear and meaningful to me," he says.

Looking around at the most recent Ag Career Day, he estimated very few employers were present at his first Ag Career Day in 1975. Sometimes he recognizes representatives of organizations, but more and more of the graduates he worked with have moved into other positions. Bruene says Ag Career Day illustrates the dynamic nature of agriculture.

"When I started in the college, in the '60s and '70s, the career areas most in demand included the meat industry, agricultural credit, ag chemicals and the seed industry. In the '80s and '90s farm supply businesses started coming. And now you have the biorenewable and technology-related firms plus all of the others," Bruene says. "What's refreshing to me is that there are huge numbers of these organizations coming to Iowa State for talent."

"I LOVE MY JOB" – ROGER THAT!

Roger Bruene made quite an impression on Roger Underwood when they met during Underwood's freshman year in 1979. Underwood says he liked Bruene right away for his positive and encouraging manner. A friendship grew that continues to this day. When Underwood heard Bruene was dismayed after hearing from graduates suffering through the Farm Crisis of the '80s, he got an idea. "I told him, "Roger, you need to know there are people out there who love their jobs," Underwood says. "So every time I would travel, and it was a lot in those days, I would send him a postcard and I would only say, 'I love my job.' " Underwood encouraged other alumni to do the same. Bruene still gets postcards from Underwood, and has kept them all. He treasures a picture of Underwood at the Great Wall holding a makeshift sign that says, "I love my job." "This was very unique in what he did at a time when for some reason I was feeling a little down. And to have him pick up on that was rewarding to me," Bruene says.

READ MORE ABOUT ROGER UNDERWOOD ON PAGE 22.

CRAWFORD HONORED WITH LIFETIME ACHIEVEMENT AWARD

Harold Crawford, agricultural education and studies emeritus professor, was awarded the Lifetime Achievement Award from the National Association of Agricultural Educators. The regional award honors Crawford's career as a secondary agriculture instructor, college professor, department head, associate dean for the college and his work in retirement.

MOORE NAMED AAAS FELLOW

Agronomy Professor **Kenneth Moore** has been named fellow by the American Association for the Advancement of Science. The honor is bestowed on association members by their scientific peers. The association named 486 fellows this year, including three others from Iowa State, for "their scientifically or socially distinguished efforts to advance science or its applications."

FACULTY SERVICE TO THE NATION

- Robert Anex, agricultural and biosystems engineering, has been named to the Science and Technology for Sustainability Subcommittee of the U.S. Environmental Protection Agency's Board of Scientific Counselors.
- Dermot Hayes has been named to the Biomass Research and Development Technical Advisory Committee, jointly administered by the U.S. Department of Agriculture and U.S. Department of Energy.
- John Lawrence, Iowa State University Extension livestock economist and economics professor, has been appointed to the Advisory Committee on Agriculture Statistics.
- The National Academies has appointed agronomy professor Micheal Owen to the National Research Council Committee on the Impact of Biotechnology on Farm Economics and Sustainability.
- Dean Wendy Wintersteen has been named to the Board of Trustees of the Farm Foundation. The Farm Foundation works as a catalyst for sound public policy by providing information to foster deeper understanding of issues shaping the future of agriculture, the food system and rural communities.

FACULTY SERVICE TO COLLEGE, UNIVERSITY

- GianCarlo Moschini, Pioneer Hi-Bred International Chair in Science and Technology Policy and economics professor, became chair of the economics department Feb. 1. Moschini replaces Arne Hallam, an economics professor who stepped down as department chair to become an interim associate dean in the College of Liberal Arts and Sciences, which co-administers the economics department with the College of Agriculture and Life Sciences.
- Larry Johnson, professor of food science and human nutrition, has been named director of the BioCentury Research Farm, a biorenewables production and processing research facility under construction west of Ames. The BioCentury Research Farm, formerly called the New Century Farm in initial planning, is under development as part of ISU's Agricultural Engineering and Agronomy Research Farm.
- Mark Westgate, professor of agronomy, has been named director of Iowa State's Center for Sustainable Rural Livelihoods. Westgate is internationally recognized for his research on the effects of drought stress on major crops.

ISA HONORS FEHR WITH FIRST LIFETIME ACHIEVEMENT AWARD

The Iowa Soybean Association honored agronomy professor Walt Fehr with the association's first Lifetime Achievement Award at its annual policy conference and 45th anniversary kickoff on Dec. 19. The award recognized Fehr for his contributions to soybean plant breeding.

ESTERS NAMED OUTSTANDING BEGINNING SCHOLAR

Levon Esters, agricultural education and studies, was named the Outstanding Beginning Scholar by the Association for Career and Technical Education Research. The award was presented for outstanding scholarship in teaching, research and service in career and technical education.

DE BACA PRESENTED DIVERSITY AWARD

Mary de Baca, director of diversity programs for the College of Agriculture and Life Sciences, was presented the university's Advancing One Community Award for faculty and staff. Iowa State's MANNRS (Minorities in Agriculture, Natural Resources and Related Sciences) chapter nominated de Baca for the award.

AGRONOMY FACULTY HONORED AT NATIONAL MEETINGS

Several agronomy faculty were honored at the joint annual meeting of the American Society of Agronomy, Crop Science Society of America and Soil Science Society of America, including:

- John Sawyer, Werner L. Nelson Award for Diagnosis of Yield-Limiting Factors
- Lee Burras, Agronomic Resident Education Award
- Jeremy Singer, Young Crop Scientist Award
- Palle Pedersen, ASA-CSSA-SSSA Early Career Professional Award
- Michael Thompson, Soil Science Society of America Fellow and American Society of Agronomy Fellow
- Thomas Kaspar, Soil Science Society of America Fellow
- David Laird, Soil Science Society of America Fellow
- Silvia Cianzio, American Society of Agronomy Fellow

STORIES ONLINE EXTRA:
View a list of 2009 College of Agriculture and Life Science Award Winners online at www.ag.iastate.edu/stories.

GOT MILK?

MANRRS PRESIDENT INVESTIGATES ITS TRACEABILITY

By Barbara McBreen

Traceability is a hot topic. When the food industry has problems with items like peanut butter and spinach, companies need to identify where the product has been distributed.

Brittini Brown, a graduate student in agricultural and biosystems engineering researching commodity traceability, is doing a case study on the traceability of milk.

"We are expanding the knowledge base on traceability, and it's so exciting. What I'm attempting to do is trace processed milk products back to the farm, where the corn was grown and fed to the dairy cattle that produced the milk," Brown says. "With other industries you can take the parts and trace them back to where they were made, like a car. What we're doing is very similar."

Education is everything to Brittini Brown and it's evident in how she articulates her goals and accomplishments.

Every summer since she graduated from high school Brown has interned at the U.S. Department of Agriculture Food Safety Inspection Service (FSIS). She's evaluated and inspected everything from food markets to meatpackers.

"I have conducted audits on beef exports in the middle of July in a meatpacking plant in Amarillo," Brown says. "It made me appreciate my education. It also makes me feel safer about the food I eat."

The internships are a component of the USDA 1890 Scholars Program, a scholarship she received in high school. The USDA partners with 1890 land grant universities (historically black colleges and universities designated as land-grants in 1890) to provide the scholarships and internships. After she graduates this summer she'll move to Washington, D.C. to begin a permanent position with FSIS.

"The funny thing is that I started out wanting to be a doctor. Once I started interning with the USDA, I understood that you can do anything in agriculture," Brown says. "There's a huge misconception about agriculture. When I mentioned that I would be working for the USDA, my peers thought I would be working in a field in rural Arkansas."

While working on her thesis she served as the 2008-09 president of the Minorities in Agriculture Natural Resources and Related Sciences (MANRRS) at Iowa State. She credits MANRRS for introducing her to the College of Agriculture and Life Sciences and the opportunities it's provided.

"MANRRS is great because it provides a network of mentors and friends," Brown says. "We have about 30 students in our chapter and we do community service and campus activities. Our chapter has won National MANRRS Chapter of the Year three times in the past four years."

Photo: Bob Elbert

Brittini Brown, a graduate student in agricultural and biosystems engineering, will finish her thesis in July. Her research is focused on commodity traceability – specifically the traceability of milk.

Last fall Brown went back to her hometown of Augusta, Ark. to share her experiences with a class of junior high students.

"I want students to know that regardless of their background, race or socioeconomic status, education is the one thing that no one can ever take away. I told the students they can do anything they want and go anywhere they want," Brown says. "I did it, and I started in that same small town."

Brown received her undergraduate degree from the University of Arkansas at Pine Bluff. She says she'd like to return to Arkansas someday to teach at the university.

STORIES ONLINE EXTRA:
Learn more about college diversity programs and MANRRS at www.ag.iastate.edu/stories.

STUDENT AMBASSADOR
STRENGTHENS COMMUNITY COLLEGE CONNECTION

By Barbara McBreen

Photo: Bob Elbert

Both Keaton Krueger (left), a graduate student in agronomy, and Nathan Upah, a junior in animal science, are on the leadership team for the College of Agriculture and Life Sciences Student Ambassador group.

When ISU agronomy senior Keaton Krueger went back to visit Kirkwood Community College, he was welcomed with open arms and questions about Iowa State.

Krueger graduated from Kirkwood and transferred to Iowa State in 2007. He went back to visit as part of the College of Agriculture and Life Sciences student ambassador recruitment team last fall.

"It was great having Keaton with us because the Kirkwood students knew him and the faculty wanted to know how he was doing," says Andy Zehr, marketing director for the College of Agriculture and Life Sciences. "He's been instrumental in recruiting students."

Krueger joined the college's ambassador organization as soon as he arrived at Iowa State. The group has doubled in size since Krueger joined two years ago and now has about 50 students. The students visit high schools, host events on campus and sponsor Shadow Days, which brings junior and senior high school students to campus to experience life at Iowa State.

"As far as I'm concerned Iowa State has the best agriculture school in the nation," Krueger says.

That's the message Krueger shares with high school students across Iowa. In April 2008, he and two other student ambassadors also took that message to the California State FFA conference.

"I always tell students about the learning communities because they give new students an opportunity to work as a group and create a network of friends," Krueger says. "I also tell them that our professors are great. They are willing to work with you and always remember your name."

Last year, Krueger was nominated to attend the American Seed Trade Association (ASTA) Annual Meeting in Orlando through the ASTA Future Seed Executive Campus Connection program. He says the event changed his life.

"I spent a week at the meeting networking with some of the most influential people in the seed industry and they all encouraged me to pursue a master's degree as soon as I graduated," Krueger says. "On the trip home, I had an eight hour layover with a few ASTA members and they shared their experiences as graduate students at Iowa State. That's when I decided to get my master's degree."

He completed his bachelor's in agronomy in May and will start his master's program in crop production and physiology with an emphasis in seed science this fall. He worked on some preliminary research before graduating this spring.

"The more time I spend around the industry, the more I realize the people I admire in the industry are all graduates from Iowa State," Krueger says. "Now, I'm starting the masters program and I'm working with some of the top professors in the world."

Krueger is on track to succeed. He's had three internships in jobs related to the seed science industry and in April he visited Argentina on a study abroad trip to learn more about soybean production in South America.

As a graduate student Krueger will continue working with the college ambassador program as a co-adviser. He says he enjoys working with his peers and may someday teach at a university or community college.

FROM CRAZY WINGS TO CALF FOOD STUDENT GAINS
MARKETING EXPERIENCE IN NAMA

By Barbara McBreen

Photo: Barbara McBreen

Josie Rudolphi was captain of ISU's number-one-in-the-nation National Agri-Marketing Association chapter.

Josie Rudolphi's eyes widen with enthusiasm when she describes her experiences in the College of Agriculture and Life Sciences. She's taken three study abroad trips, served on the student council and was team captain of the nationally recognized National Agri-Marketing Association (NAMA) student club.

Rudolphi, a May 2009 graduate in agricultural communications, says her experience with NAMA's marketing team defined her career goals. The experience helped her understand what it takes to market a product from beginning to end.

"Every year we write a marketing plan for a new agricultural product a company has recently developed. We research every aspect of it, define the target market, consider product weaknesses and strengths and put together a creative promotional campaign," Rudolphi says.

In 2008, the team promoted pork Crazy Wings, a snack item similar to a drumstick. The team placed in the top six and received the National Creative Club Award. The group was named the top NAMA chapter in the country in 2008 and 2009. The students also brought home a $3,000 John Deere Signature Award in 2008, which was based on the chapter program and placement in the marketing competition.

This year the team marketed ImmunAttain, a supplemental booster for calves. They advanced to the semifinals in Atlanta in April where they competed against 35 other teams from Canada and the United States.

Along with practicing presentations twice a week to prepare for Atlanta, the team also raised $10,000 for travel costs. Stacey Noe, program coordinator for the college's Agricultural Entrepreneurship Initiative and team adviser, says the students worked concessions in Hilton Coliseum, received sponsorships and did survey work for the USDA to raise the money.

Along with her NAMA experiences, Rudolphi says her study abroad trips have increased her understanding of the world. She's gained insight into other cultures on trips to Australia and Panama, but she says her last study abroad trip to Ghana was the most amazing. The group studied the soils of the country with Andrew Manu, an Iowa State agronomy professor who grew up in Ghana (read more about Manu on page 20).

"It was incredible," Rudolphi says. "I've traveled quite a bit, but Africa was by far the most eye-opening and memorable trip."

Both scholarships and grants make studying abroad affordable, Rudolphi says, and it's an opportunity she would recommend for every student.

"It's one of the greatest things the college offers. Iowa State has connections everywhere and you get to see areas that tourists don't see," Rudolphi says. "The tough part is trying to decide where to go because there are so many cool places to study."

Rudolphi plans to pursue a career in extension education and reach out to help producers understand new technologies and help consumers understand agriculture.

"People care about where their food comes from, but there is a disconnect between people and agriculture," Rudolphi says. "So I want to help consumers understand agriculture."

Rudolphi plans to attend graduate school at Iowa State in agricultural education and studies this fall. This summer she's working as a public affairs intern for Monsanto in Idaho.

MASTERING LIFE AND A MASTER'S DEGREE THROUGH DISTANCE EDUCATION

By Barbara McBreen

Mark Bogner isn't a typical graduate student in the College of Agriculture and Life Sciences. He has a fulltime job, lives in Walnut, Ill., where he and his wife have two children under the age of two, and he's a student in ISU's Master of Science in Agronomy Distance Education Program.

He does a lot of juggling, but the college's distance education program provides the flexibility he needs to pursue a master's degree in agronomy. He's also a runner and a morning person, which he says helps him stay on track with his graduate work.

"Someone thinking about this program needs to anticipate the time commitment," Bogner says. "You have to schedule your time so you're not taking too much time away from any one thing. The classwork is demanding and it's a challenge to balance the course material with your daily life."

Photo: M.S. in Agronomy Program

Mark Bogner (right) came to campus last summer to take an agronomy 594 class. Bogner, who lives in Walnut, Ill., is identifying soils based on texture. The students in the class are enrolled in the Master of Science in Agronomy Distance Education Program.

After graduating from Illinois State University with a degree in agriculture, he wanted to work on his master's degree at the same institution. But he was sidetracked and moved to Hawaii to work for Pioneer Hi-Bred International. Bogner still wanted to pursue a master's degree, so his coworkers suggested the master's of agronomy program at Iowa State.

"The M.S. in Agronomy program fits with what I do in the workplace and it's bolstered my knowledge in my job," says Bogner who is a soybean research associate at Pioneer Hi-Bred International, Inc. "Our main focus in soybean breeding is improving yields, and we do this by incorporating strong defensive and agronomic traits into our soybean varieties," Bogner says.

Currently 110 students are enrolled in the Master of Science in Agronomy Program. Courses for the program are delivered via the Internet and CDs. Students use a variety of ways to communicate with professors, from emails to phone calls to the latest social networking and software options.

The technology allows students to access the program from anywhere in the world. Bogner was able to begin the program while working in Hawaii and continue his degree work when he moved back to Illinois.

Last summer Bogner came to Ames to take one of the required on-campus classes. He says seeing the campus and meeting professors helped him put names with faces and places.

"My professors also have done some live interactions on the Web and that's been neat. It allowed us to communicate and get to know some of the people in the class," Bogner says.

The pursuit of a master's degree has already allowed Bogner to advance professionally within Pioneer. He expects the experience will continue to be beneficial after he graduates in December.

DISTANCE EDUCATION OPPORTUNITIES IN THE COLLEGE OF AGRICULTURE AND LIFE SCIENCES

The Master of Science in Agronomy Program, administrated through the agronomy department, is one of the six graduate degrees offered by the college to students at a distance. The Iowa State University Brenton Center for Agricultural Instruction and Technology Transfer coordinates the college's distance education offerings for both credit and noncredit courses. Currently 75 online graduate courses are available allowing professionals to pursue advanced degrees without disrupting their professional careers. The Brenton Center has an enrollment of 1,670 students from both on- and off-campus. For more information go to www.ag.iastate.edu/stories or contact Lori Youngberg at lyoung@iastate.edu or (515) 294-7656.

Photo: Barbara McBreen

Jenniffer Walker, a sophomore in animal science from Puerto Rico, spent her first summer working as a student research assistant at the Iowa State University Dairy Farm.

DREAM OF BEING A VET DRAWS STUDENT FROM PUERTO RICO TO ISU

By Barbara McBreen

It takes 13 hours to fly from Puerto Rico to Iowa and when Jenniffer Walker first arrived at Iowa State, she was afraid she'd be homesick. Instead, she found a welcoming Puerto Rican community.

"There are a lot of students here from Puerto Rico. We have our own club and we share our culture with the community through events on campus," Walker says.

Walker, a sophomore in animal science, came to Iowa State straight out of high school.

"I worked as a student research assistant at the dairy farm last summer doing everything from collecting blood samples to helping with biopsies," Walker says. "I'd never worked on a farm and I had never worked with large animals. It was a good experience."

> "THERE ARE A LOT OF STUDENTS HERE FROM PUERTO RICO. WE HAVE OUR OWN CLUB AND WE SHARE OUR CULTURE WITH THE COMMUNITY THROUGH EVENTS ON CAMPUS."

She spent her first year learning the terminology associated with livestock. Her goal is to go on to veterinary school and work with or do research on the animals native to Africa.

"I have always cared about animals and I wanted to go to veterinary school, but Puerto Rico doesn't have that type of school," Walker says. "And Iowa State is one of the best in the nation."

After almost two years in Ames, Walker says she enjoys the changing seasons, the campus and the community.

"In Puerto Rico the university is in the middle of a large city and the gates are closed, here everything is open," Walker says. "I tell my friends that Ames is part of Iowa State and everyone gets involved."

The Puerto Rican student population makes up the largest minority group in the college, says Aurelio Curbelo, director of agricultural multicultural programs in the College of Agriculture and Life Sciences. He says Iowa State began building relationships and recruiting students from Puerto Rico in the 1960s, and now alums are helping with those recruitment efforts.

Three years ago Curbelo, who is from Puerto Rico, began recruiting high school students in the San Juan area and attending the local college fairs. The second year he was there Iowa State recruited 30 students.

Curbelo, who recruited Walker, says she is an excellent student and involved with everything from talking with families at the new student orientation to choreographing dances for the Puerto Rican Cultural Night.

"Jenniffer has helped with the career fair in San Juan. She does a great job because she's a role model and she can talk to students," Curbelo says. "She tells them it's cold in the winter, but she also tells them about the opportunities and what she's enjoyed."

Being involved is what Walker thrives on. She recently joined Block and Bridle, a student club for those interested in animal agriculture, and modeled in Iowa State's student spring fashion show.

BLOCK AND BRIDLE CLUB WINS NATIONAL AWARDS

The Block and Bridle Club received top awards at the organization's national convention held in San Antonio in February. The ISU club placed second for its yearbook and took fifth place for its Web site. Michael Slattery, animal science, placed fifth for outstanding junior. Nikki Ferwerda, animal science lecturer, is the club's adviser. Pictured are the 2008 officer team of (front) Zane Gray, Adviser George Brant, Isaiah Spath (middle) Amanda Luitjens, Alyce Gehling, Melissa Reed, Bridget Driscoll, (back) Matt Mensing and Kyle Kabela.

ISU SOILS JUDGING TEAM WINS REGIONAL COMPETITION

The student soils judging team brought home a first place finish from a regional competition in Minnesota. The overall win was buoyed by a first place finish in the team judging portion of the event and a second place finish by junior Nathan Anderson, in the individual competition. The win in the American Society of Agronomy Region 5 Soil Judging Contest qualifies the Iowa State students to compete at the 2009 national competition in Springfield, Missouri. The Iowa State team beat out seven other Midwest schools for the top prize. The ISU team members are Nathan Anderson, Sara Linn, Jenny Richter, Leah Ruff, Eric Schultz, Matthew Streeter and Brad Yeager. Jon Sandor, professor of agronomy, and graduate student Jessica Veenstra, coach the team. (Read more about Sandor on page 18.)

TWO COLLEGE SENIORS RECEIVE ALUMNI ASSOCIATION'S TOP AWARDS

Two of the five winners of ISU's Wallace E. Barron All-University Senior Award are College of Agriculture and Life Sciences students. Daniel Fischer and Clark Richardson, both agricultural business majors, were recognized as outstanding seniors by the Alumni Association. The honor is the university's top award for students recognizing outstanding character, achievement and promise.

COLLEGE STUDENTS NAMED PORK PRINCESS AND YOUTH AMBASSADOR

Jessica Droppert of Hudson is the 2009 Iowa Pork Princess. She is a freshman studying animal science. Droppert was one of 10 county pork queens competing for the 2009 IPPA crowns. Brandon Ledger will serve as the 2009 Iowa Premier Pork Youth Ambassador. The Stockport resident is a sophomore in animal science.

HOOGENDOORN NAMED CHAMPION SHEEP SHEARER

Dairy science senior Mark Hoogendoorn of Rock Rapids was named the intermediate champion shearer in the National Western Stock Show Sheep Shearing Contest. Contestants are judged on time, condition of fleece, absence of second cuts in fleece, sheep handling, absence of cuts on sheep and appearance of shorn sheep. The event was held in January in Denver.

ROBERTS DELIVERS TOP POULTRY, FEED PRESENTATION

Stacey Roberts won the students' competition of technical presentations at the International Scientific Forum during the International Poultry and Feed Expo. She is a doctoral candidate in agricultural and biosystems engineering.

FARM OP CLUB FIRST IN NATIONAL CONTEST

The Farm Op Club's team was first in the National Post-Secondary Agriculture College Quiz Bowl and was first for the Crop Specialist Award at the National Post-Secondary Agriculture Students convention in March in Hershey, Pa. The team is advised by Tom Paulsen, lecturer in agricultural education and studies. Other team awards included a second place for the Beef Livestock Specialist Award and third place for the Soil Science Specialist Award. Team members pictured with awards are (front) Zach Klaver, Ross Enslin, Alex Johnk, Nick Griffieon, Eric Dial, Alicia Wulf (back) Laura Johnk, Kara Moeller, Brian Anderson, Cole Burrack and Corey Hillebo. Award winners not pictured are Betsy Jensen, Will Cornelius, Janie Imming and Tasha Kopf.

Nathan Anderson

AGRONOMY STUDENTS HONORED AT NATIONAL MEETINGS

Three agronomy students received awards during the national Students of Agronomy, Soils and Environmental Sciences meetings: Jamie Seeman won the National Research Symposium Contest; Rachael Cox was awarded the Hank Beachell Future Leadership Scholarship; and Nathan Anderson was elected national SASES president and named a Golden Opportunity Scholar.

CORTUM RECEIVES PRESIDENT'S LEADERSHIP AWARD

Nicole Cortum, senior in public service and administration in agriculture, was recently honored with Iowa State's David W. and Ellen J. Raisbeck Leadership Award. It is one of the President's Leadership Initiative Awards.

2009 LIVESTOCK JUDGING TEAM DOES WELL AT SPRING CONTESTS

The Livestock Judging Team finished eighth out of 23 teams at the National Western Livestock Judging Contest in January. The team also hosted and competed at the Iowa Beef Expo Judging Contest in February, fielding groups that finished second and sixth out of 13 teams. Over spring break the team traveled to the Houston Livestock Show and finished fifth out of 19 teams. Team members included Cody Schminke, Kenny Benson, Emily Weber, Charlie Hild, Isaiah Spath, Kelly Sheets, Joe Brady, Melissa Reed, Josh Zuck and Danny Jenkins. The team is coached by animal science lecturer Jeff Thayne and assisted by Morgan Core, a senior in animal science.

IOWA SHOULD MAKE SOIL QUALITY A PRIORITY

By Kendall Lamkey

WHILE VISITING THE EXHIBIT *DIG IT! THE Secrets of Soil* at the Smithsonian National Museum of Natural History during a recent trip to Washington, D.C. I learned a number of ways soil is involved in our daily lives that even I as an agronomist did not know. The exhibit, sponsored by the Soil Science Society of America and others, does an outstanding job relating our personal and global relationship to soils.

I was surprised to find out the primary source of phosphorous in the Amazon rain forest is dust storms in the Sahara desert. I was impressed by the sheer diversity and quantity of life found in the soil. And I discovered the impact soil has on something that seems as simple as building a house. The exhibit also touched on the role of soil in climate change, a topic of world-wide public interest.

Soil interacts with our climate in many ways, but one of the most important is its role in the carbon cycle as the largest terrestrial reserve of carbon on the planet. How we humans interact with our soil directly impacts how much carbon in the soil enters the atmosphere as carbon dioxide. Iowa soils contain only 50 percent as much carbon today as compared to when they were first plowed 150 years ago. Cropping systems, drainage systems, tillage, rainfall, temperature and other factors all contribute to a reduction in soil organic matter.

The amount of soil carbon is largely in the hands of humans. If soil carbon continues to decrease, the bountiful harvests Iowa has enjoyed will become increasingly costly to sustain. Further decreases in soil carbon will force Iowa farmers to increase external inputs into the cropping system to maintain production levels. But to increase soil carbon our society will have to change its priorities and habits. We will have to change our cropping systems, tillage practices and drainage systems.

This means becoming more intentional about the mix of annual and perennial crops planted in Iowa. Recent studies at Iowa State University show putting as little as 10 percent of our row crop landscape into perennials could reduce erosion by as much as 80 percent – even in flood years like 2008. The planting of perennials, coupled with changes in our cropping system like cover crops, perennial ground covers and increased use of reduced or no tillage practices, will not only result in decreased erosion but also will have a huge impact on the carbon balance in Iowa's soil. This all would result in the added benefit of increasing the quality of life for all Iowans through cleaner water and a more diverse landscape.

Contributed photo

Kendall Lamkey

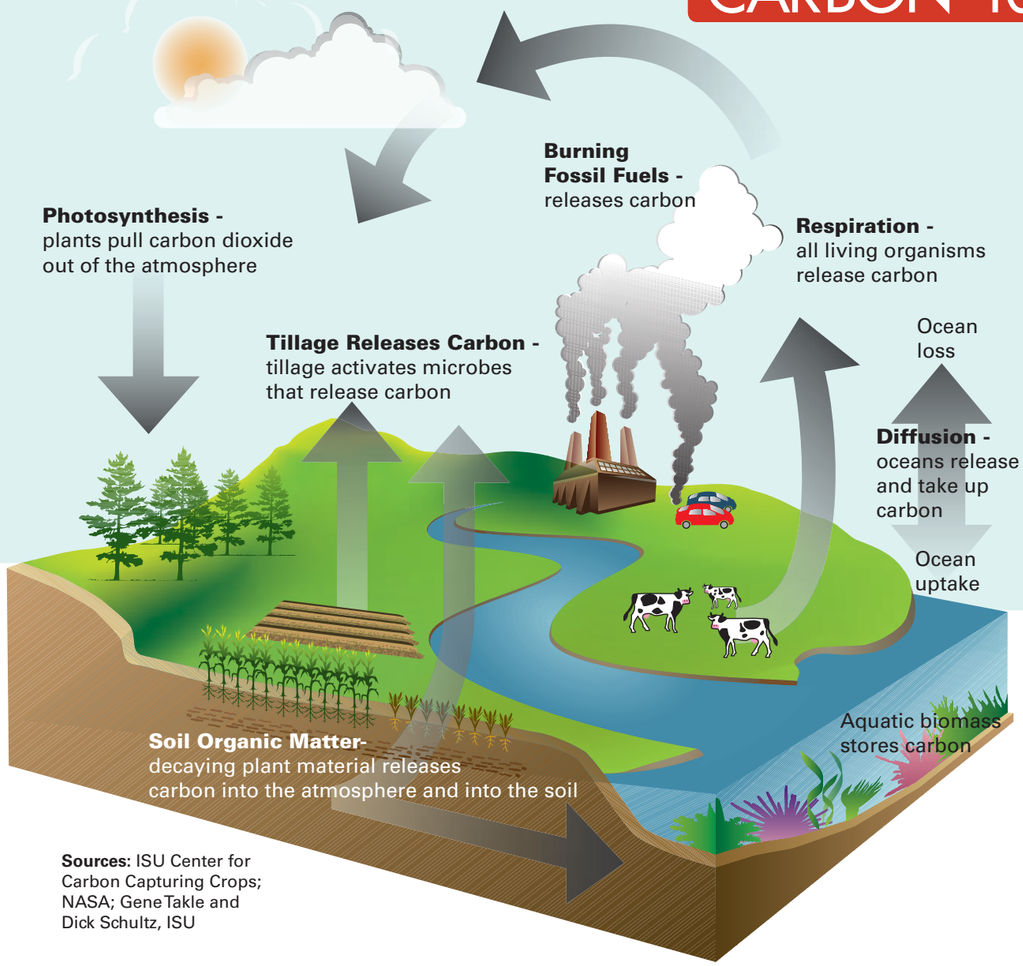
It does not mean, however, that we need to sacrifice production of crops and the livestock and poultry that depend on them for feed, or even ethanol and biodiesel. It means we will have to increase corn and soybean production on the remaining 90 percent of the acres through better agronomics – genetics, fertilizer management, pest control and how these factors interact with our weather. It means we will have to better integrate our crop, livestock and poultry systems. It means we never leave our soils bare through the winter.

I believe Iowa should lead the way in making soil health our number one priority. We can start by adopting zero tolerance for soil particulates in our streams, rivers and lakes. Soil is the number one water pollutant in our state according to the Iowa Department of Natural Resources. The Natural Resource Conservation Service's 2003 Annual National Resource Inventory shows Iowa has 128 million tons per year of water erosion, making Iowa number one in the nation for soil erosion by water. By making significant changes in our production systems Iowa can lead the nation in crop and livestock production and lead the nation in clean water.

Let's make this our top priority and reward those who take the initiative. The future of Iowa depends on it. More importantly, the future of agriculture depends on it. Because Iowa is agriculture.

STORIES online extra: *Dig It! The Secrets of Soil* at the National Museum of Natural History is open until January 2010. Learn more at www.ag.iastate.edu/stories.

CARBON 101



Sources: ISU Center for Carbon Capturing Crops; NASA; GeneTakle and Dick Schultz, ISU

by Barbara McBreen

Carbon is the building block of life and found in every living thing. It's also found in solids, gases, oceans, the atmosphere and the soil.

It's an element in carbon dioxide, which is one of the greenhouse gases in the atmosphere that protects the earth like a blanket. For millions of years carbon cycled through plants, animals and the atmosphere, but the atmospheric balance changed when humans started clearing land for agriculture and burning fossil fuels.

Increasing greenhouse gases is causing this blanket to heat up the earth and change weather patterns. Along with the oceans, plants are the only means of taking carbon dioxide out of the atmosphere.

"Plants pull carbon out of the air through photosynthesis and produce glucose or simple sugars," says Dick Schultz, professor of natural resource ecology and management. "A significant part of that sugar goes into plant material and when the plant dies and decomposes some of the carbon remains in the soil as organic matter and some is returned as carbon dioxide.

Using plants, researchers are looking at ways to pull excess carbon out the atmosphere and store it in plants and the soil.

CAPTURING CARBON – SUSTAINING SOILS

By Barbara McBreen

Carbon buried in the soils of the Midwest has made the 25 million acre region the site of the richest soil in the world.

"To have good productive soil you need good organic matter, which is synonymous with carbon and that's what we have in the Midwest," says Mahdi Al-Kaisi, associate professor of soil and environmental management.

Since the sod was first broken over 150 years ago, the soil in the Midwest has lost more than 50 percent of its organic matter according to Al-Kaisi.

"Every time you disturb the soil and change the soil temperature it starts oxidizing the organic matter. The microbes go into a frenzy when the soil is tilled and that's how organic matter is lost," Al-Kaisi says.

> "EVERY TIME YOU DISTURB THE SOIL AND CHANGE THE SOIL TEMPERATURE IT STARTS OXIDIZING THE ORGANIC MATTER. THE MICROBES GO INTO A FRENZY WHEN THE SOIL IS TILLED AND THAT'S HOW ORGANIC MATTER IS LOST."

Contributed photo

Soil scientist Mahdi Al-Kaisi researches how soil management, tillage practices and cropping systems can improve and increase organic matter.

Plants pull carbon out of the atmosphere and return it to the soil to increase organic material. Al-Kaisi is researching how soil management, tillage practices and cropping systems can improve and increase organic matter.

"The Midwest's soil is conducive to carbon sequestration or carbon storage, if we can manage the land well. There are several ways to increase carbon storage, such as putting marginal land in the Conservation Reserve Program, where it won't be touched for an extended period of time," Al-Kaisi says.

To provide baseline data on how much carbon is retained using different crops, Lisa Schulte Moore, assistant professor of natural resource ecology and management, is working with agronomists, soil scientists, hydrologists and economists through the Landscape Biomass Project. Using different cropping systems the researchers will measure the amount of biomass produced and the amount of carbon remaining after harvest.

"As a landscape ecologist, I work at the macro scale. I'm really interested in how whole landscapes perform in terms of agricultural productivity, carbon storage and other benefits," Schulte Moore says.

The researchers are experimenting with biomass cropping systems using several landscapes, from floodplain to hills, and comparing them to conventional cropping systems. The purpose is to find a system that is productive, profitable and environmentally sustainable.

"We're hoping we can grow more biomass and subtract carbon from the atmospheric carbon pool," Schulte Moore says. "If it works, producers implementing these systems could sell the carbon captured to two markets – the energy market and the carbon market."

As researchers begin to understand how to measure carbon as a commodity, results show storing carbon in Iowa's soils may not only provide future markets for farmers, but will improve soil and water quality as well.

Photo: Bob Elbert

Lisa Schulte Moore works with researchers across disciplines to measure the amount of biomass produced and the amount of carbon remaining after harvest in various cropping systems.

ANCIENT SOILS GIVE CLUES TO OUR IMPACT ON TOMORROW'S SOIL

By Melea Reicks Licht

Jon Sandor is into long-term research. Some of his field sites are more than 1,000 years old.

"When I think of sustainable land use, I think in terms of many generations. We've been monitoring agricultural soils for as long as 100 to 150 years in a few places, but ancient fields contain information about soil change and condition over millennia," says the agronomy professor. "They're just remarkable."

An anthropologist turned soil scientist, Sandor is an expert in ancient agricultural soils and indigenous knowledge of soil management – a unique interdisciplinary field known as ethnopedology. He has conducted his research in arid regions of Peru, Mexico and the southwest United States. He collaborated on much of his work with his late wife, Deb Muenchrath, who as an assistant professor of agronomy, investigated the physiology of native maize varieties.

Sandor examines ancient fields that have been cultivated and compares them to neighboring native soils. He looks at soil profiles and horizons, as well as color, structure, organic matter, nitrogen, phosphorus and other site-specific properties for evidence of erosion and other change.

"We find the ancient fields by locating irrigation canals, remnants of terraces and other water conservation structures.

Contributed photo

Jon Sandor's research on the ancient agricultural soils of the Southwest show soil management practices impact soil quality for generations.

Some prehistoric fields are even still farmed today," he says.

He combines his findings with information from anthropologists, archeologists, geologists and other agronomists to create a more complete picture of indigenous farming and its impacts. His projects often include Native American tribes and collaborators from other universities.

"We know terracing, crop rotations and organic matter maintenance are good for soil. But, these studies show that over 1,000 years these practices still show benefits," he says. "They also show the harm we do to our soils can have lasting impacts for many centuries. The soil can't always repair itself easily."

Sandor also has collaborated with ISU colleagues and students to investigate how recent farming affects soil in Iowa. And he studies how traditional practices for conserving moisture and growing crops in arid soils can be used today. He is currently examining prehistoric fields in Mexico, New Mexico and Arizona.

HEALTHY SOILS IMPORTANT FOR URBAN LANDSCAPES

By Barbara McBreen

Tree roots breathe. That's a fact Jan Thompson wants her students to learn and landscapers to understand.

Thompson, a professor of natural resource ecology and management ('84 MS agronomy, '91 PhD forestry), has roots in soil science and understands the needs of trees. Her focus is in urban natural resources and she says urban soils are often so compacted that it's difficult for oxygen to pass through the soil and into tree roots.

"Land development usually involves scraping off topsoil and compacting the next layer to support structures and then replacing topsoil," Thompson says. "Instead of 18 inches of loose organic soil, you probably have eight inches of pretty firm topsoil."

That topsoil may support some plant life but it isn't adequate for trees. Drainage is another problem caused by compacted soil. Water doesn't drain away from roots and can drown a tree.

Thompson and colleagues examined the relationships between soil and tree growth in five Midwestern states in urban and rural areas. They found that soil bulk density

Photo: Bob Elbert

has a measurable impact on tree growth.

"We know high density soil can impede root exploration, which may explain the lower growth rates," Thompson says.

Thompson and graduate student Cassie Herringshaw also are researching the effects of buffer strips in urban settings. The planned strips of vegetation along streams buffer water runoff and trap sediment, but are mostly found in rural areas.

"We know that constructing buffers can provide filtration and improve soil characteristics in rural areas, but we wanted to know if buffers could absorb the excess runoff in urban areas," Thompson says.

The results are promising. Thompson says after a typical rainstorm a four-acre buffer along College Creek in Ames captured most of the runoff from the 15-acres bordering the buffer.

PROF DEVELOPS NEW TOOL TO STUDY SOIL'S TOP LAYER

By Brian Meyer

Robert Horton's students learn quickly where the most important soil is located.

Answer: The top 6 inches.

What happens in this thin skin of soil isn't fully understood or well-measured. The Charles F. Curtiss Distinguished Professor in agronomy wants to change that.

"It's challenged scientists for years," Horton says. "This thin layer is the most dynamic part of the soil. It gets the wettest, driest, hottest and coldest. It experiences greater variation of temperature than any other part of earth."

With National Science Foundation funding, Horton is developing an instrument called a heat pulse probe to help capture this great variation and dynamism. His prototype of a 10-needle probe measures, with sensors, temperature with depth and time. It's placed directly in soil and can be used in diverse landscapes.

The tool may help scientists study thermal properties of soil and calculate evaporation at different depths, from the surface down into those precious top inches. Horton plans to field test the probe this year in Iowa and, with his collaborators, in North Carolina and China.

Why is it so important? It's where the action is, Horton says. "It's where you plant seeds. It's where tremendous microbial communities live. It's where much of carbon gets stored. It determines how quickly the earth heats up. It's important for Iowa, where our soils are the *sine qua non* that makes our agricultural production unique and critically important to the world."

Photo: Bob Elbert

Robert Horton takes a close look at the heat pulse probe he's developed to measure soil temperature with depth and time.

Data from Horton's studies will inform big-picture issues on climate, environment and agriculture's growing role in energy. In another project, funded by ConocoPhillips, Horton is studying how growing biomass crops may affect water quality beneath soil, carbon content of soil and carbon dioxide emissions.

"Soils are vital, complex, fragile and threatened. They're the base of the food chain that supports over 6 billion people. Fundamental knowledge and practical management skills are required to sustain them," Horton says.

SOIL SURVEYS ESSENTIAL TO DECISION MAKING FOR MORE THAN 100 YEARS

By Brian Meyer

It's hard to imagine life without soil surveys.

Appraisers and assessors use them to determine fair and equitable land valuations. Sanitarians use them to help decide appropriate sites for septic tank filter fields, landfills and wastewater lagoons. Planners of all kinds rely on them to make land-use decisions. Farmers use them to understand the land's capacity to produce crops, to more precisely manage fields and to help determine conservation practices.

Since 1902, Iowa State and partners have been developing and disseminating soil surveys. The current partnership, the Iowa Cooperative Soil Survey, was formalized in 1966. It involves ISU Extension, Experiment Station research in the College of Agriculture and Life Sciences, Iowa Department of Agriculture and Land Stewardship, USDA Natural Resources Conservation Service and Iowa's counties.

Headquartered in the Department of Agronomy, the ISU partners coordinate the collection, compilation, interpretation, publication and dissemination of soil surveys.

Updates are constant. Currently, soil scientists are resurveying and updating four counties.

"We need updates much the same way Iowa needs current weather information," says Lee Burras, the professor of agronomy who represents ISU on the National Cooperative Soil Survey. "Soils, like weather, aren't static. We need to know changes to successfully continue to predict best uses and productivity."

That's why soil surveys continue to go high-tech.

One of the most promising tools is LIDAR (light detection and ranging) — using lasers to make incredibly precise topographic maps.

Tom Fenton, a retired agronomy professor who's worked with soil surveys since the 1960s says soil surveys have been excellent examples of federal, state and local cooperation. "The transfer of information is incredibly valuable. For all involved, the information is neutral, a scientific basis for making decisions and has an impact that's huge."

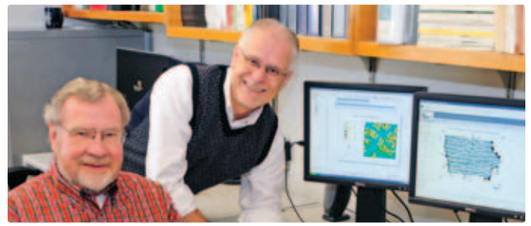


Photo: Bob Elbert

Tom Fenton (left) and Lee Burras are leading soil survey efforts in the Department of Agronomy.

WORLDLY PROFESSOR GIVES STUDENTS SOLID FOUNDATION IN SOILS

By Ed Adcock

It's hard to imagine a better place to learn about soils than amidst some of the most productive soils on earth. And agronomy associate professor Andrew Manu can't think of a better place to teach an introductory soils course than at Iowa State.

"I don't feel as comfortable anywhere as I do in Iowa. Students here are very motivated. They want to do something. And they don't take their studies lightly at all. And that's what gets me going," he says.

Manu ('79 MS agronomy, '84 PhD) brings a wealth of global experience to his teaching and research. He grew up in Ghana, where he earned his bachelor's degree, and worked for Texas A&M University, Alabama A&M University and the U.S. Agency for International Development in Niger.

Photo: Bob Elbert

Andrew Manu (right) teaches more than 400 students annually in the college's core Introduction to Soil Science course. Here he talks with teaching assistant Nathan Anderson about the hands-on activities available to students in the soils teaching lab.

Manu has been coordinating Introduction to Soil Science, one of the core courses for the college, for the past eight years. There are three versions of the course based on majors. Most students take Agron 154 which is meant for agronomy students, but also serves to fill a general agriculture requirement for several other majors within the college. Agronomy 155 is for horticulture majors and Agronomy 156 is tailored to landscape architecture students.

Manu gets a thrill at the moment when students grasp a concept they have been struggling with. "I love it. It's the best thing I have done in my life," he says.

Each year approximately 420 students register for the courses. He says all the students study the same principles, but the applications are different. Projects differ for each class:

- 154 students are given an imaginary section of land by a landowner who is not familiar with agriculture. They are asked to identify areas for growing corn and soybeans under reduced tillage with part for rotations, part for terraces and an area for a home site. The assignment is to identify the soils and what they are suited for.
- 155 students get a parcel of land and are asked to identify areas for planting vegetables and flowers, nut and fruit trees, nursery stock, as well as for a housing development, a golf course and sod development.
- 156 students look at urban development, developing a shopping mall or apartment complexes, along with single-family dwellings and recreation space. They identify the best areas for these activities based on the soils at the site.

The course is Web-based and students can view the course material online or download the scripts. In addition, Manu gives non-mandatory lectures to an average of 100 students per week who prefer face-to-face interaction. Weekly quizzes for all courses are held in the soils learning center rather than on-line, because Manu wants to see the students. Manu also gets to know students one-on-one when groups meet in discussion sections to work on their soil management projects.

GEORGE WASHINGTON CARVER CHAIR

Manu was appointed as Iowa State University's first George Washington Carver Chair in April. This is in recognition of his dedication to student instruction and leadership in the development and promotion of a friendly environment for students from under-represented ethnic groups to succeed at Iowa State University, especially in the field of agriculture. He plans to use the position to continue his desire for excellence in teaching and to engage in research to assess the impact of urbanization on soils. He says, "Most importantly, I will use the position to attract, train and nurture brilliant students of all social status, class, position or race at Iowa State University."

THESE RESEARCHERS TAKE "THE SKY'S THE LIMIT" TO HEART

By Susan Thompson

For decades, Iowa State University researchers have studied the cycling of water through soil, vegetation and the atmosphere that is vital to production agriculture.

Now a team of Iowa State and University of Iowa researchers is working to perfect the use of remote sensing technology to monitor the water cycle. The team has received a $1.3 million, five-year grant from NASA.

The research is taking place on 200 acres of Iowa State farmland south of campus, referred to as the "Iowa Validation Site." At the site equipment automatically measures soil moisture, precipitation, radiation and evapotranspiration. Manual measurements also are taken.

Remote sensing equipment is mounted on a boom lift, airplanes and eventually will be on satellites to observe the field periodically, so data from the on-site monitoring and the remote monitoring can be compared.

Brian Hornbuckle, assistant professor in agronomy, is the project's principal investigator. "We know the landscape in which we live changes on many scales over space and time," Hornbuckle says. "Remote sensing is the only tool available that can capture all these changes."

Hornbuckle says remote sensing instruments work like cameras to record the "brightness" of the earth's surface. But instead of detecting visible light like normal cameras, the remote sensing instrument "sees" microwaves. Wet soils appear dark and dry soils appear bright.

In the next few years, both the European Space Agency and NASA will launch satellites to measure soil moisture. Each mission will produce global maps of soil moisture at about the scale of a typical Iowa county.

"This information could be used by meteorologists to improve forecasts of weather and climate," Hornbuckle says. "Our team is focused on determining if the satellite data is accurate enough to be useful."

Last September, an airplane carrying a remote sensing instrument from NASA's Jet Propulsion Laboratory made passes over the site on three consecutive days. The collected data was analyzed to determine the accuracy and value of remotely sensed measurements of soil moisture.

The team also collaborates with researchers at the United States Department of Agriculture – Agriculture Resource Service National Soil Tilth Laboratory on the Iowa State campus, and shares data with other interested researchers.

Amy Kaleita, assistant professor in agricultural and biosystems engineering, is a co-investigator. "We know a key driver of crop yield is climate. Drought predictions can show up in soil moisture patterns," Kaleita says. "Anything we can do to support monitoring and projections of field conditions helps producers make better management decisions."

For Hornbuckle, Kaleita and the rest of their research team, the old saying "the sky's the limit" has a more personal meaning.

"The use of remote sensing to monitor the water cycle is a big idea but we're starting small in this one field," Hornbuckle says. "Eventually we expect the technology to be expanded and used on a larger scale, such as river basins, states and regions."

Photo: Bob Elbert

A remote sensing instrument called a microwave radiometer is being used in an Iowa State University research field as part of a new project to perfect the use of remote sensing technology to monitor the water cycle. Amy Kaleita and Brian Hornbuckle are the Iowa State researchers involved. A forklift moves the radiometer throughout the field and holds it about 40 feet above the ground.

ALUM USES EXPERIENCE TO COLOR FUTURE OF EMERGING ENTREPRENEURS

By Ed Adcock

Photo: Bob Elbert

Underwood had this 1926 International fire engine restored to use for tailgating at Iowa State. The license plate – ISU TKE – shows his fraternity affiliation.

As an Iowa State student, Roger Underwood knew he wanted to be his own boss. He wasn't sure how or in what business, but felt he would recognize when opportunity knocked.

That opportunity came after graduation when Underwood ('80 agricultural business) was working in Minnesota for an agrichemical distributor. He encountered farmers who were starting to use Roundup in their operations. The herbicide was expensive and many producers wondered how they could use it more efficiently with spot applications.

"In hearing some growers talk about how they couldn't see where they sprayed Roundup, it just kind of hit me:'Well, why not develop a colorant that you could put in the Roundup so you can see where you sprayed it,'" Underwood says.

> "I MADE A COMMITMENT TO MYSELF AND IOWA STATE TO MAKE IT THE NUMBER ONE AG ENTREPRENEURSHIP PROGRAM IN THE COUNTRY."

He called up Jeff Becker, a friend since preschool, and told him he had an idea and if they moved fast they could develop a product and market it. In its first year in business (1983), Becker-Underwood registered sales of $43,560.

Today it is a $130 million international specialty chemical company providing products to the agricultural, seed treatment, golf, horticulture, forestry and aquatic markets. After 23 years as CEO, Underwood stepped down from the daily operations in January 2006 after he and Becker sold controlling interest in the firm.

Although Underwood is no longer involved in the day-to-day operations of Becker-Underwood, he is confident of its future because of the "entrepreneurship culture" of the management and employees, which includes 36 Iowa Staters.

Agriculture and entrepreneurship are still the focus of his endeavors. Underwood, Becker and partners in Riverwood Management, LLC have invested in about 10 small, privately held agribusinesses around the country. Underwood says he understands the agricultural part of the businesses, gets to act as a mentor with the management and "create value in agriculture."

Underwood provided the founding gift for the Agricultural Entrepreneurship Initiative in the College of Agriculture and Life Sciences because he says he wants to nurture the spirit of entrepreneurship in rural America and pass it on to another generation. He continues to advise the initiative and speak to classes.

"I made a commitment to myself and Iowa State to make it the number one ag entrepreneurship program in the country," Underwood says.

Underwood also serves as chairman of Campaign Iowa State: With Pride and Purpose – the Iowa State University Foundation's $800 million fundraising endeavor. "I really enjoy meeting the alumni, donors and friends of Iowa State, especially when we're helping them craft a gift that can help to take Iowa State to a new height," he says.

He thinks so much of Iowa State that he is entrusting it with the education of his sons: Andrew, a sophomore studying management information systems, and William, a high school senior who plans to enroll in agricultural business.

"I came to Iowa State as this wide-eyed, small-town boy who thought I wanted to be in agriculture the rest of my life. Not only did I learn on campus, but I also learned in my fraternity, my clubs and other activities. I feel I owe Iowa State some of the leadership that I was afforded by so many people and I want to be a part of the group giving back to students," he says.

READ MORE:
More about Underwood and his friendship with former career services director Roger Bruene is featured on page 7.

STORIES ONLINE EXTRA:
Visit the Agricultural Entrepreneurship Initiative online and view video of Underwood describing Becker - Underwood at: http://www.ag.iastate.edu/stories.

VETERINARIAN FROM DAY ONE

By Susan Thompson

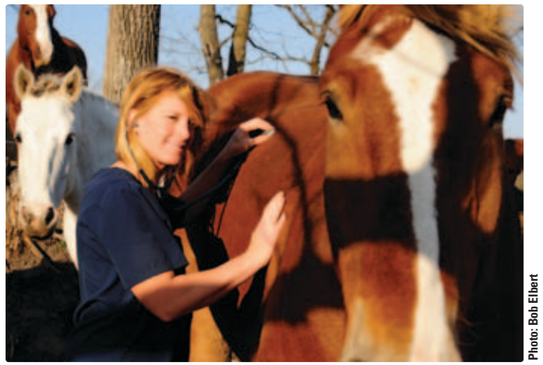


Photo: Bob Elbert

Jodie Pettit checks on one of the horses at Timber Creek Therapies, where she serves as the veterinarian. She is a member of the Audubon-Manning Veterinary Clinic and is on the advisory board for ISU's Veterinary Diagnostic and Production Animal Medicine Department.

Most people change their mind several times before settling on a career. Not Jodie Pettit. As a 5-year-old, she decided to become a veterinarian.

Pettit ('96 animal science, '01 DVM) grew up on a diversified crop and livestock farm near Creston. "We had pigs, cattle, horses, dogs and cats. I dearly loved the animals," she says. "One of my earliest memories is giving our barn cats 'dental cleanings' using pieces of their dry food. I knew then I wanted to be a veterinarian."

Another event helped seal the deal. "We had an outbreak of pseudorabies in our swine herd that also killed some cattle. I found the dead cows in the same pasture as my beloved horses," Pettit says. "I was terrified the horses might die, too. I tagged along with the veterinarians while they performed the disease investigation and was fascinated by everything they did."

John Thomson, now dean of Iowa State's College of Veterinary Medicine, was one of those veterinarians. "He was so thorough and compassionate in the face of a devastating situation. I knew I wanted to be just like him someday," she says.

When it was time to choose a university, Iowa State came out on top. "I looked at several schools but none could beat Iowa State's atmosphere or reputation. It had the best animal science curriculum in the nation and was unmatched in large animal veterinary education," Pettit says.

Iowa State also provided the perfect outlet for Pettit's love of horses. "The Rodeo Club was a huge part of my undergraduate experience," she says. "It gave me a chance to get closer to the sport without having to invest in a pricey horse, training and equipment. Club members became my dearest, closest friends."

Pettit also was involved in Sports Club Council and Block and Bridle. In the vet college, she participated in species clubs, the Student Chapter of the American Veterinary Medical Association, the Wildlife Care Clinic, emergency medicine and the foal ICU.

Pettit has been at the Audubon-Manning Veterinary Clinic (AMVC) since graduation. "Each of the AMVC veterinarians has the opportunity to focus on one species," she says. "Mine is equine, but I also do a fair amount of bovine and swine work. A perfect day for me includes some of each species."

Pettit serves on an advisory board for Iowa State's Veterinary Diagnostic and Production Animal Medicine Department, plus two Iowa Veterinary Medical Association committees.

She also serves on the Timber Creek Charities board of directors. Timber Creek Therapies near Guthrie Center is an outpatient facility where people with disabilities receive therapy, often while on horseback. Pettit was introduced to Timber Creek Therapies as the veterinarian for the horses, then asked to serve on the charities board, which funds services for those without adequate insurance.

Pettit's husband Rick works for McAninch Corporation in Des Moines. "Luckily for me, he enjoys riding on vet calls and is great help. That's where we spend quite a bit of time together," she says. The couple also enjoys riding horses, hunting and cheering for the Cyclones.

STORIES ONLINE EXTRA:
Pettit's veterinary practice is home to several other ISU alumni and student interns. "Students are wonderful for us," Pettit says. "They bring new insight and youthful exuberance to our daily routines." Visit AMVC online at: www.ag.iastate.edu/stories.

Photo: Melea Reicks Licht

More than 150 ISU alumni attend Cy's Country Barbecue at Jordahl's acreage southwest of Des Moines annually. The 2009 barbecue is set for June 12.

ALUM HOSTS CY'S ANNUAL COUNTRY BARBECUE

By Melea Reicks Licht

The Dixieland music greets you at the crest of a green, sloping Iowa farmyard. The scene is dotted with alumni sporting cardinal and gold for an evening celebrating their alma mater. The band is nestled in the porch of an old barn housing a buffet line and surrounded by party-goers offering welcomes with hugs and handshakes.

Don Jordahl is host to it all. He opens up his home, his log cabin and his barn southwest of Des Moines to more than 150 area alumni each June for Cy's Country Barbecue.

Contributed Photo

Alum Don Jordahl is shown in the foreground of his "bank barn" he had moved to his property southwest of Des Moines from Story County. He is holding a wooden peg like those used to restore the 110 year-old barn.

"There is something about this country casual atmosphere that amazes me. It invites people to meet and mingle. They linger and perch on the old barn porch," Jordahl says. "It is just easy to communicate and get to know each other."

The event began in the mid-1990s. After Jordahl ('58 agricultural education) hosted his fellow members of the ISU Alumni Association Board of Directors at his home for a picnic, he and staff of the Alumni Association decided to invite area alumni. Jordahl hired a band and the tradition took hold.

The barn that houses much of the party is appropriately a "bank barn" that Jordahl, a career banker, had moved to his property from Story County. He had the main portion of the 110 year-old barn restored using the original wooden peg construction. It was originally built into a hill, or bank, giving livestock access to a basement. He's also relocated a 1870s log cabin from a farm in Minnesota to his acreage and outfitted it with a modern kitchen and bathroom for use as a guesthouse.

"Barns aren't just buildings," he says. "The engineering and craftsmanship of these buildings are just marvelous. Built without power tools over 100 years ago, with care and maintenance, some are still standing straight and tall."

Jordahl quips he is a "recovering banker." He founded Iowa Banking Magazine in 1992 after working with Brenton Banks (now Wells Fargo) and Bankers Trust Company. He sold the highly respected magazine in 2008, but now only contributes occasionally to the monthly publication.

Jordahl enjoyed 4-H work and working for ISU Extension in Storm Lake after he graduated from Iowa State. But he found his true calling thanks to a meeting Russell M. Vifquain, professor in agronomy and placement director for the college at the time, set up with W. Harold Brenton in 1960.

"Brenton was a wonderful judge of character. He hired me," Jordahl jokes.

Today, he considers himself "underemployed" rather than retired, and donates much of his time to Iowa State on the Alumni Association Finance Committee; the Athletic Council; Order of the Knoll; Alliance for ISU; National Cyclone Club; and the Greater Des Moines Cyclone Club. He previously served on the ISU Foundation's Investment Committee.

He also provided funding for a collage of 12 photographs of Christian Petersen's major sculptures to the newly completed alumni center on the Iowa State campus.

In addition to his support of Iowa State, Jordahl is active in his church and the local YMCA and serves as a Polk County representative for the Iowa Barn Foundation.

STORIES ONLINE EXTRA:
Learn more about Cy's Country Barbecue and see more photos of Jordahl's barn at: www.ag.iastate.edu/stories.

ALUMNA PREENS THE GREENS AS DIRECTOR OF U.S. GOLF ASSOCIATION'S EDUCATIONAL PROGRAMS

By Susan Thompson

A good story begins with good quotes. In the case of Kimberly Erusha, it was obvious right away this would be a good story.

She started her horticulture career at an early age. "My mom often bought me a Punch 'N Grow kit in the spring," Erusha says. "You put the potting mix in the plastic tray, plant the seeds, put on the clear plastic lid and watch the plants grow."

Erusha ('86 horticulture) grew up in Walford, Iowa, and says she never considered going to college anywhere else. "Five of my six brothers and sisters went to Iowa State, and many of my cousins. When you see a good thing, you go with it," she says.

Erusha's description of the horticulture department at Iowa State makes her sound like a college recruiter's best friend.

"I liked the broad scope of the horticulture major," Erusha says. "It provided great exposure within many facets of the major. I was just as likely to take a class in turfgrass management as I was home horticulture, greenhouse plants and woody ornamentals. The professors were accessible and enthusiastic."

After graduation, Erusha worked for a Des Moines lawn care company before moving to the University of Nebraska as an extension associate in the Turfgrass Integrated Pest Management program. While there, she earned master's and doctorate degrees in horticulture, specializing in turfgrass management.

Photo: Copyright USGA/John Mummert

Alumna Kimberly Erusha, U.S. Golf Association director of education, Green Section, poses on the USGA campus in Far Hills, N.J.

"WE WORK DIRECTLY WITH GOLF COURSE SUPERINTENDENTS AND COURSE OFFICIALS TO HELP THEM PROVIDE THE BEST PLAYING CONDITIONS POSSIBLE WITHIN THE BUDGET THEY HAVE AVAILABLE."

In 1990, Erusha joined the United States Golf Association (USGA) as manager of technical communications, and was promoted to director of education in 1994. The USGA, based in Far Hills, N.J., is the national governing body of golf.

Erusha directs the USGA Green Section's education programs. "The Green Section funds turfgrass and environmental research and provides on-course consultations," she says.

Erusha also coordinates the USGA environmental efforts, and travels across the country to speak with environmental groups, regulatory agencies and golf course officials.

She is married to Iowa State graduate John Kunnert, who received his bachelor's degree in business administration in 1983. He played basketball on scholarship, so the two closely follow Iowa State athletics and attend a few games each year.

Besides Iowa State athletics, Erusha also keeps tabs on the horticulture department, where University Professor Nick Christians was her adviser. "I worked one summer at the Horticulture Farm for Dr. Christians," Erusha says. "I still get to interact with him when the USGA awards research grants to Iowa State, and when an ISU turfgrass student participates in our internship program."

It's easy to see Erusha is proud of her Iowa roots. What does she miss about her home state? "Driving Highway 30 to a football game, stopping at the Big-T Maid-Rite in Toledo and seeing people dressed in their Iowa State team colors," Erusha says. "Small towns, Hilton Magic, the best pork tenderloin sandwiches, the Iowa State band, the helpfulness of Midwest people, hearing the Iowa State campanile bells."

Great answer. Sometimes, a good story almost writes itself.

Photo: Melea Reicks Licht

BEAL LED SOCIOLOGY TO ADOPT TRADITION OF APPLIED RESEARCH

By Melea Reicks Licht

Enjoying the view from his home built into a mountain on the island of Oahu, Hawaii, George Beal is a world away from Iowa State where he and Joe Bohlen began the tradition of applied research for which the sociology department is known.

Upgrading to the latest cell phone or I-pod is a small part in a large scale adoption of technology first described by former ISU researchers George Beal and the late Joe Bohlen.

Beal ('43 agricultural economics, MS '47 agricultural economics, PhD '53 rural sociology) and Bohlen ('47 farm management, MS '48 sociology, PhD '54 sociology) worked as a team in all phases of research.

They described the adoption of a new product or technology according to a bell curve that characterized groups, including "innovators" and "laggards," based upon the speed with which they adopted.

In addition to their pioneering work on the adoptions of new ideas and innovations, they also studied organizational effectiveness, including communication, and the strategy of community action.

"We wanted to know how to mobilize and organize community resources, mainly volunteers, to achieve projects and progress in areas like education, religion, economics, health and recreation," Beal says.

Beal and Bohlen's ability to relate the relevance of their research to diverse organizations and situations made them highly sought consultants for corporations, government agencies, foreign countries, organizations and media for decades.

Their findings have been used to create a cancer screening model for the American Cancer Society, community development programs, civil defense plans and in the marketing of many consumer products. Beal was chosen as a member of a Ford Foundation task force to study and suggest steps to improve food production in India in 1959. Beal and Bohlen shared their results on a prime-time, national network television show about farm families in 1963.

Paul Lasley, current chair of the ISU sociology department says, "George and Joe articulated the importance of rural sociology to understanding rural communities, rural culture and the linkages between global events and local conditions. This helped instill an applied orientation in the department that continues today."

Beal arrived at Iowa State fresh from a small Oregon farm shortly before Pearl Harbor. There he met his wife Evelyn who earned a degree in home economics education. Beal was able to finish his bachelor's in 1943 before serving in the Army and earning a Purple Heart.

Beal returned to Iowa State in 1946. He and Bohlen are credited for recruiting and mentoring a group of students, known affectionately within the ISU sociology department as "The Shop," who later became outstanding rural sociologists.

Beal went on to serve as the first department chair of sociology when the department of sociology and economics split in the early 1960s.

He retired in 1977 and joined the staff of the East West Center, a federally funded center on the campus of the University of Hawaii at Manoa. He carried out cooperative activities with students, government and university professionals from Asia and Pacific Rim countries.

Beal, an emeritus Charles F. Curtiss Distinguished Professor, is now fully retired. He says the most rewarding parts of his career were working with students and seeing his research in action.

"Finding a wide range of clients interested in the many facets of our work proved that applied sociology has utility," he says.

Photo: ISU University Archives

Bohlen (left) and Beal traveled and consulted extensively in the 1960s and 1970s using this flannel board to explain the concepts of adoption and diffusion and community action.

PLANT PATHOLOGY ALUM DIES AT AGE 108

Alumnus **Chen Hongkui** ('34 PhD plant pathology) died Oct. 12 in his native China at the age of 108. After earning his doctorate degree he returned to China in 1935 and joined Zhejiang University as an associate professor. He is regarded as one of the founders of China's plant quarantine system and was awarded the National Professor of Distinction, the country's highest honor for a professor. A group of Iowa State faculty and staff on a study abroad trip visited Chen in 2006 and helped celebrate his 106th birthday. He is shown above with professor Dick Schultz and Denise Bjelland, global ag programs. A story about that visit is at: www.ag.iastate.edu/stories.

ALUMNI LECTURES ON ECONOMIC LANDSCAPE, FUTURE OF OIL AND GAS AVAILABLE ONLINE

The 2009 College of Agriculture and Life Sciences Distinguished Lecture, delivered by alumnus **Michael Boehlje** Feb. 19, is available to view on the Web. Boehlje is an agricultural economist at Purdue University. He presented a speech titled, "The Landscape of Agriculture Today and Tomorrow." Alum **Sig Cornelius**, a ConocoPhillips executive, spoke Dec. 4 on campus about "The Future of Oil and Gas." The senior vice president and chief financial officer earned an ISU bachelor's degree in farm operations in 1976. The presentation was part of the Engineering Policy and Leadership Institute's thematic year on Energy Security and Sustainability. You can view the presentations at: www.ag.iastate.edu/stories.

ALUM NAMED DIRECTOR OF SUSTAINABILITY PROGRAMS AT IOWA STATE

Alumna **Merry Rankin** became the first director of sustainability programs at Iowa State, on Jan. 15. The new position was created as part of the Live Green! initiative, a university-wide effort to turn Iowa State into a model of energy efficiency. She was previously a director at the Iowa Department of Natural Resources. Rankin earned a master's in wildlife biology in 1998, and previously earned a bachelor's degree in business in 1987, both from Iowa State.

ALUMS HONORED BY DAIRY SCIENCE CLUB

Two college alums were honored at the Dairy Science Club's annual banquet. This year's honorees included **Roger Lenius** ('71 dairy science) of Waverly as a distinguished graduate. He is a field representative for Swiss Valley Farms. **Mark Kerndt** ('83 dairy science) of Waukon was named an honorary member.

ISU ALUMNI ASSOCIATION AWARDS

Speers

Newlin

Degners

- National Service Award - **Meg** ('46 food and nutrition) and **Vaughn** ('49 animal science, '51 MS animal nutrition, '57 PhD) **Speer**
- James A. Hopson Alumni Volunteer Award - **Ryan Schon** ('95 agronomy)
- Floyd Andre Award - **Roger Underwood** ('80 agricultural business)
- Henry A. Wallace Award - **Owen Newlin** ('51 agronomy, MS '53)
- George Washington Carver Distinguished Service Award - **John Pesek**
- George Washington Carver Distinguished Service Award - **Richard** ('72 agricultural education, '77 MS) and **Nancy** ('72 food science) **Degner**
- To learn more about award winners visit www.ag.iastate.edu/stories.

AG BUSINESS CLUB NAMES OUTSTANDING ALUM

Dwight Seegmiller ('75 agricultural business) was recognized by the Agricultural Business Club with the 2008 Outstanding Alumi Award. Seegmiller is the president and CEO of Hills Bank and Trust Company, which is one of the largest community banks in the state of Iowa. He also serves as a board member of the ISU Board of Governors and the Iowa Transfer System. At left, Carly Cummings, freshman in agricultural business, presents Seegmiller the award.

WINTERSTEEN, FISCHER NAMED HONORARY MASTER PORK PRODUCERS

Dean **Wendy Wintersteen** was named an Honorary Master Pork Producer by the Iowa Pork Producers Association (IPPA). The award is presented each year to two recipients for their outstanding and distinguished service to the betterment and success of Iowa's pork industry. College alumnus **Mark Fischer**, international marketing manager for meat, livestock and genetics for the Iowa Department of Economic Development, also received the honor. He earned a bachelor's degree in animal science in 1978. Wintersteen earned a doctorate degree in entomology in 1988. They received the award during the 2009 Iowa Pork Congress Banquet. IPPA president John Vossberg presents Wintersteen's award at right.

STORIES ONLINE EXTRA:
Read an essay about alum Harlan Fierstine ('73 fisheries and wildlife biology) who made a difference in the lives of some special children by keeping his promises and sharing his love of nature. The piece was submitted by Kathy Adams of Backus, Minn. See www.ag.iastate.edu/stories.

Photo: Barbara McBreen

CURTISS HALL STARTS SECOND CENTURY WITH CRUCIAL UPDATES

Curtiss Hall turns a hundred years old in 2009. First known as Agriculture Hall, then named in 1947 for Charles Curtiss, dean of the college from 1902 to 1932, the building is one of the most familiar and distinctive landmarks on Iowa State's central campus. Each semester, thousands of students stream into Curtiss Hall to attend classes in the 400-seat auditorium and smaller classrooms. Besides serving the administrative needs for the College of Agriculture and Life Sciences, it also houses the Iowa Agriculture and Home Economics Experiment Station and Extension to Agriculture and Natural Resources, plus several other departments, centers and programs.

As the building enters its second century, a campaign is underway to ensure its use for future generations. The auditorium has already undergone complete renovation and the front steps have been replaced. Plans are underway to create a more student-centered building with modern, energy efficient, high quality features including a student commons, meeting rooms for group work and interviews and a ground-level wing devoted to student services.

The cost of the Curtiss Hall renovation currently is estimated at $11.5 million, which will be provided through private fundraising and university resources. Although a timeline for the project has not yet been determined, initial work could begin in 2009 or 2010. The project team, consisting of university administrators and architects and the Smith Metzger architectural firm of Des Moines, is devoted to improving the overall safety, visual appeal and function of the building while preserving its traditional architectural elements.

The Monsanto Company pledged $1 million last August to enhance the offices and programs serving students in the college. The programs include student services, career services, study-abroad, entrepreneurship and marketing and recruitment. The college plans to name the student services wing of the building for the company.

The Monsanto Company gift is part of Campaign Iowa State: With Pride and Purpose, the university's $800 million fundraising effort that was publicly launched October 2007.

For information about giving to the Curtiss Hall renovation effort contact Ray Klein, senior director of development, at (515) 294-7677 or rklein@iastate.edu.

STORIES ONLINE EXTRA:
Learn more about Curtiss Hall and its architectural ornamentation at www.ag.iastate.edu/stories.

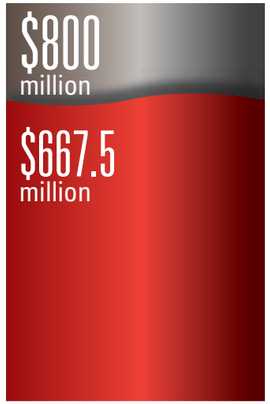
Photo: Smith Metzger

Illustrations of the newly remodeled auditorium and the planned atrium.

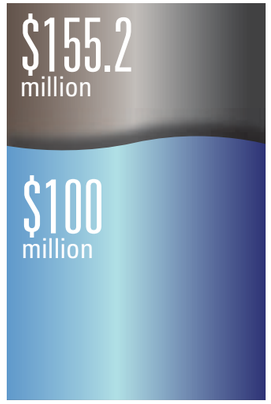
CAMPAIGN IOWA STATE UPDATE

campaign totals as of April 9, 2009

CAMPAIGN IOWA STATE
WITH PRIDE AND PURPOSE



IOWA STATE UNIVERSITY
College of Agriculture and Life Sciences



NEW FACES ON COLLEGE DEVELOPMENT TEAM

There are a few new faces in the college's development office. Ray Klein took over senior director duties from Rich Bundy in July 2008. Bundy is now vice president for development for the ISU Foundation. Steven Zoncki, formerly director of development for the college, also has moved on to a position with the ISU Foundation. Zoncki's departure created an opportunity for Ryan Harms to join the college as a development director. Harms previously worked as the director of development for the College of Pharmacy at the University of Kansas. "We have a great team that will continue to excel in private gift fundraising and stewardship activities that support key strategic initiatives in the college," Klein says. Alumni are always welcome to stop in 310 Curtiss to visit with staff or reach them via phone at (515) 294-7677 or e-mail at agalumni@iastate.edu.

Development Staff (from left): Ray Klein, senior director of development; Karen Bolluyt, program assistant; Ryan Harms (back), director of development; Beth Weiser, program assistant; and Craig Schmidt, director of development.

CAMPAIGN ENSURES CURRENT STUDENTS HAVE SAME, IMPROVED OPPORTUNITIES AS ALUMNI

-- Marvin Walter ('62 animal science, MS '64), owner, Dayton Road Development Corporation; Board of Governors, ISU Foundation; College of Agriculture and Life Sciences Campaign Committee

"The number-one reason I chose to serve on the college's campaign committee was to try to pay the university back for what I've received as a graduate. In the same way, I believe every graduate needs to step up and help shoulder the load in rebuilding college and university programs. My experiences at Iowa State formulated many possibilities throughout my career. Those experiences included intercollegiate judging teams – meat, livestock and dairy. Our training taught us a good deal about how to make decisions and how to stand behind those decisions. When I went out into the real world I had the kind of background to help me take advantage of the opportunities presented. That's why I was pleased to see the proposed agriculture pavilion as one of our campaign priorities. It will be a terrific facility for young people to get involved in judging teams and gain similar skills and experience to that which was so helpful to me."

IOWA LEARNING FARM TEAMS UP WITH FARMERS TO

BUILD A CULTURE OF CONSERVATION

By Carol Brown

Photo: Bob Elbert

Jackie Comito gets some footage for the ILF video series on preserving Iowa's soil and water.

Building a culture of conservation is a lofty goal, but the people involved with the Iowa Learning Farm are seeing solid progress.

The Iowa Learning Farm project, initiated in 2005 and headquartered at Iowa State, uses a grassroots approach to generate public awareness of the importance of protecting and enhancing Iowa's natural resources.

Members of the Iowa Learning Farm (ILF) partner with farmers in Iowa conducting on-field demonstrations of conservation practices including reduced tillage and cover crops. The ILF team studies the agronomic, economic, environmental and social aspects of increasing conservation. A second tier of involvement includes "ILF Conservationists," who serve as local spokespersons for the project. They are conservationists, leaders in their communities and among their peers.

ISU's Jacqueline Comito, ILF associate project manager, realizes that to enact change on Iowa's fields, there are many factors at play.

"It's not just a technical issue. Emotions and personal choices have as much of an impact on how a farmer treats the land," says Comito. "Most farmers know the facts supporting conservation practices but are still reluctant to change. We are trying to reach this audience and strike a chord."

Comito serves ILF with ISU sociology professors Paul Lasley and Lois Wright Morton. In addition, Iowa State faculty from the agronomy, economics and agricultural and biosystems engineering departments and staff from conservation organizations and state government agencies contribute to the project.

Contributed Photo

ILF cooperator Rick Juchems and daughter Liz pose on their farm.

Rick Juchems, an ILF farmer-cooperator from Plainfield, Iowa, received a strong reminder about the importance of conservation during last summer's floods. After the flood waters receded from his fields, he could see what practices worked. He says if the land isn't taken care of today, it may not be there for his children. His daughter, Liz, a sophomore in agricultural business at Iowa State, wants to return to the family farm.

"It is important for my generation to acknowledge that management choices made today play a significant role in the sustainability of agriculture," says Liz.

Liz spent last summer working for ILF, demonstrating the rainfall simulator at venues across the state.

"Because of this project and my father's involvement with conservation, I have found a passion for conservation. Being an advocate for soil and water quality plays a large role in my life now and will continue," says Liz.

Education is a key to ILF goals. Recently Comito produced a series of videos "A Culture of Conservation," the ILF uses to begin dialogue about preserving Iowa's soil and water. They have been distributed through partner organizations and to Iowa agricultural educators.

ILF evaluations are showing that farmers realize the status quo needs to change. The project is truly making gains towards its goal of building a culture of conservation — farmer to farmer, Iowan to Iowan.

Iowa Learning Farm Partner Organizations:
Iowa Department of Agriculture and Land Stewardship
Iowa Department of Natural Resources
Natural Resources Conservation Service
Conservation Districts of Iowa
Iowa State University Extension
Iowa Farm Bureau
Leopold Center for Sustainable Agriculture

STORIES ONLINE EXTRA:
To view the new video series "A Culture of Conservation" or to request a DVD visit: www.ag.iastate.edu/stories.

COLLABORATORS POOL RESOURCES & KNOWLEDGE TO ADVANCE SOIL RESEARCH

By Tyler Teske

On paper, an institution's organizational chart may look like a web of unconnected colleges, departments, labs, centers and a host of other entities. But, on the Iowa State campus, the way things get done is through collaborations crisscrossing organizational boundaries.

Two professors on campus illustrate this collaboration. Since the late 1980s, soil scientists Michael Thompson and David Laird have worked closely together. Thompson is the Pioneer Hi-Bred Professor of Agronomy in the Department of Agronomy; Laird is a lead scientist at the United States Department of Agriculture - Agricultural Research Service National Soil Tilth Laboratory (NSTL) and a collaborative professor of agronomy.

Proximity has played a part in their collaborative efforts — the buildings they work in are separated by only a few hundred feet — but the major factor is their common research interests in clay surface chemistry and the role of soil in capturing carbon to mitigate global climate change.

"The ability to walk across the parking lot and start bouncing an idea off another person is invaluable," says Laird. "A lot of times just talking with someone who knows your subject matter helps to clarify the validity of a hypothesis. We come to the table with different resources, but we speak a common language."

That common language in researching soils has resulted in the joint publication of 13 journal articles.

Photo: Bob Elbert

Shared ideas, research and equipment are all part of the collaboration between David Laird (left) and Michael Thompson. Here they discuss the latest readings from this X-ray diffractor machine.

Activity at the molecular level provides insight into how clay in soils, like those found in Iowa, absorb organic chemicals and sequester carbon as well as how soil properties change with the addition of "biochar," a co-product of bioenergy production.

While much of Thompson's and Laird's efforts have focused on microscopic interactions, their current research takes that small-scale knowledge and applies it to a larger scale as they explore the ability of soils to sequester carbon at the landscape level.

> "BEING ABLE TO SEE INDIVIDUAL PARTICLES OF CLAY AND ORGANIC MATTER IS VERY EXCITING. IT REALLY ILLUSTRATES WHAT IS AND IS NOT HAPPENING AT AN EXTREMELY BASIC LEVEL IN THE SOIL."

The collaboration is one of not only shared ideas, but also shared resources. Thompson and his students are able to interact with the personnel and use the equipment at NSTL, and Laird and his colleagues are able to use equipment located in Agronomy Hall, preventing the need for duplication of expensive, specialized equipment. They say the national focus of NSTL and the regional and state focus of the university complement each other as well.

"The National Soil Tilth Lab has provided steady support for research with people, equipment and funding," says Thompson. "As a result, our collaborative research has been able to move forward irrespective of outside grants. With collaboration, there is a base level of support that allows our research funds to accomplish more."

The working relationship started while Laird ('87 PhD agronomy) was a student at Iowa State and Thompson was a member of his graduate committee. The two first collaborated on a project to simultaneously analyze clays with X-ray diffraction and electron microscopy. Twenty years later, they are still working together and still using X-ray diffraction and electron microscopy techniques to learn how clay and organic matter influence soils and the environment.

"To most of the public, the images we look at in our research are pretty dull," says Thompson. "But for us, being able to see individual particles of clay and organic matter is very exciting. It really illustrates what is and is not happening at an extremely basic level in the soil."

NEW COLLEGE ART AT DAIRY FARM, SEED SCIENCE BUILDING

An etched glass mural titled "River of Milk" has been installed at the Iowa State University Dairy Farm's visitor's center. Part of the design replicates Christian Petersen's sculpture known as "History of Dairying," located in the Food Sciences Building. In the mural, a river of milk flows from Petersen's historical dairy images and past the dairy breeds — Holstein, Guernsey, Brown Swiss, Ayrshire and Milking Shorthorn. Engraved into a marble border below the mural is the word "milk" written in 27 different languages.

A life-sized sculpture of George Washington Carver, an iconic figure at Iowa State University, is now located outside Iowa State's Seed Science Center. The sculpture, the only life-sized likeness of the famous scientist anywhere in the world, is cast from the maquette sculpted by Christian Petersen in 1949. The sculpture stands at the entrance to the center, which recently opened a new 5,000-square-foot addition. The Committee for Agricultural Development provided funding for the piece.

The pieces join more than 600 works of public art in the Iowa State University Art on Campus Collection. Learn more about these and other pieces of campus art at www.ag.iastate/stories.

FRESHMAN ISN'T CLOWNING AROUND AS BULLFIGHTER

When Lucas Moore talks about nimble footwork and all the right moves, he's not talking tango. He's talking bull. Moore is a bullfighter – a type of rodeo clown that protects bull riders who dismount or are bucked off. He distracts the bull before it hooks or tramples the cowboy. Moore recently was approved to receive The Professional Rodeo Cowboy Association card and plans to earn cash for college working in rodeos around the Midwest this summer. But he isn't in it for the money. The freshman in animal science is pursuing his childhood dream. Read more about Moore at www.ag.iastate.edu/stories.

COLLEGE STUDENTS MEMORIALIZED ON MU'S GOLD STAR HALL

Twenty-one Iowa Staters who died in the line of duty were added to the Gold Star Hall in the Memorial Union during a ceremony on Veterans Day. Five of the veterans were students majoring in agricultural fields. William Franklin Hedges, the only veteran from World War II to be honored, was a Chicago native who majored in animal husbandry in 1942 and 1943 and served in the Army Air Force as a technical sergeant in the South Pacific. The remaining four were Vietnam veterans: Dennis Lynn Ahrendsen of Oxford Junction, animal science in 1966 to 1967, Army specialist fourth class; David Glenn Lovitt of Bedford, agriculture special in 1966 to 1967, Army specialist fourth class; Roger Eugene Carroll of Avoca, agriculture special in 1968, Army specialist fourth class; and Donald Ralph Ledlie of Des Moines, agricultural business in 1966 to 1967, Army corporal. Read more about each veteran at www.ag.iastate.edu/stories.

SHARE ISU AG VANITY PLATES ONLINE

STORIES editor Melea Reicks Licht received these telling license plates as a gift this winter. Those of you with ag-related ISU vanity plates are invited to share them with your fellow Iowa Staters. A few alumni with their plates, including "AGRNMST" Paul Kassel ('78 horticulture and agronomy, '81 MS crop production and physiology) and "CYFARMR" John Lundvall ('90 agronomy, '93 MS crop production and physiology), are already featured online at www.ag.iastate.edu/stories. Please submit a photo of you with your plates to stories@iastate.edu to extend the mileage on this feature. Those submitting photos will be placed into a drawing for college merchandise. The entomology department also is hosting a "bug-related" competition for vanity plates – either existing plates or catchy phrases that would make good plates. Send such entries to Bryony Bonning at bbonning@iastate.edu. Winners will receive the department's 2010 calendar.

DISCOVERY NETWORK PROGRAM FEATURES COLLEGE FACULTY

Corn and the efforts of Iowa State to improve it were featured on a Discovery Network program, "How Stuff Works." Kendall Lamkey, agronomy professor and chair, and Larry Johnson, director of the Center for Crop Utilization Research, were among those highlighted in the program. View clips from the show at www.ag.iastate.edu/stories.

ALUM SPEAKS ABOUT ANIMAL WELFARE ON OPRAH

Jude Becker ('99 agricultural studies) made an appearance on the Oprah show in October. The episode, "How We Treat the Animals We Eat," included footage from large- and small-scale pork operations including Becker's organic farm near Dyersville, Iowa. For a link to the episode or to learn more about Becker's operation visit www.ag.iastate.edu/stories.

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Now she's working to save the sight of others. As a sophomore in Genetics, Sam is part of a research team that's studying stem cells to find cures for degenerative eye diseases like glaucoma. At the College of Agriculture and Life Sciences, we combine classroom work with hands-on experience in the lab. We feel this inspires a passion for learning, and helps students discover their life's calling.

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