

S150
1855-2005



impacts



Celebrating 150 years of advancing knowledge and transforming lives in communities, agriculture and natural resources.



a message from the dean



Jeffrey D. Armstrong

This special year marks Michigan State University's sesquicentennial—150 years since the founding of our nation's first land-grant college.

The Morrill Land Grant Act of 1862 is widely regarded as one of America's greatest contributions to the furtherance of

higher education, not only at home, but around the world. The land-grant colleges provided access to higher education to those among the "mechanical and agricultural classes" who had historically been largely deprived of that opportunity.

Perhaps more than any educational policy ever conceived, the land-grant legislation democratized higher education and opened the doors of opportunity for hundreds of thousands of people, now spanning several generations of our nation's development. I would confidently suggest that you or several people close to you have directly benefited from our

forebears' dreams of higher education for the many versus the privileged few.

It is fitting and proper that we pause during this special year to reflect on the genius of the land-grant vision, and to celebrate Michigan State University's seminal role in the continuing development of that vision. At the same time, we must continue looking forward to determine how the land-grant mission must keep evolving and expanding to anticipate and meet the challenges of the future.

In her recent sesquicentennial address, "Boldness by Design," President Lou Anna K. Simon said that 2005 is a defining moment for MSU. It is a time when all of us "will gather forces to envision a new kind of land-grant university and reshape our collective future—for the 21st century world."

Ultimately, it is through learning, discovery and engagement—our work in the classrooms, research laboratories and communities—that will redefine and reshape the land-grant mission.

As you read the stories in this magazine—stories that vividly portray how MSU programs in communities, agricul-

ture and natural resources directly affect people—you will see first-hand the power and relevance of the land-grant mission. You will read, for example, how MSU Extension worked to keep a family intact, how a CANR multicultural apprenticeship program for high school students shaped their career choices, how MAES research is helping protect Michigan's precious freshwater resources, how MSU scientists are working with communities to keep invasive species at

bay, and how the College of Veterinary Medicine, one of our partner colleges, has created a training center to help better prepare large-animal veterinarians. These and many other stories feature programs that impact lives—hence the name of this special publication.

I think you will read this magazine with joy and justifiable pride. It is the same pride and joy that David Morris expressed so poignantly when he presented his wonderful gift of \$7.5 million to MSU. It is the joy and pride that are grounded in the rich heritage of Michigan State University, the Michigan Agricultural Experiment Station, MSU Extension and the College of Agriculture and Natural Resources in advancing knowledge and transforming lives in communities, agriculture and natural resources at home and around the world.

President Lou Anna K. Simon and David Morris share a warm moment during the VIP breakfast at MSU Ag Expo. There, Simon announced that Morris, a Grand Ledge farmer, pledged an estate gift valued at \$7.5 million to endow research, teaching and Extension activities within the College of Agriculture and Natural Resources, MSU Extension and the Michigan Agricultural Experiment Station.



Jeffrey D. Armstrong
Dean
College of Agriculture
and Natural Resources

impacts

features

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Michigan Harvest by Sy Ellens. This acrylic on watercolor paper painting is one of many rural landscapes by Sy Ellens. Ellens has won many awards in national and international juried shows. His work is found in numerous collections around the world. Learn more at www.syellens.com or by calling (269) 342-6326.

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*Excerpted with permission from *Futures* magazine, a publication of the Michigan Agricultural Experiment Station.



Thomas G. Coon

Welcome!

For more than 90 years, MSU Extension has been serving Michigan families, communities, agriculture and natural resources. I'm proud to say that we have always been ahead of the curve in anticipating the need for our help. In fact, Michigan State College (now MSU) hired the first livestock field agent to help farmers operate more profitably in 1907—seven years before the U.S. Congress established the Cooperative Extension System and directed the nation's land-grant universities to carry out its work.

Throughout the 20th century, our agents helped families better manage their resources, encouraged children to learn productive skills that would follow

them throughout their lives, assisted our farmers to become most productive in the world, and protected the vast water, wildlife and woodland natural resources we enjoy today.

As we move into the 21st century, our educators still perform these functions and more. They are helping communities and businesses access technology, garner grant funds, wisely use their land resources and improve quality of life for residents. They work in concert with MSU campus-based specialists and researchers to meet the needs of citizens in every Michigan county. Because they live in the communities they serve, these educators help to establish partnerships that build local capacity. Together they

make up a strong, statewide network that other organizations call upon to educate citizens about critical issues ranging from food safety to water quality to bovine tuberculosis.

I hope this magazine will help you learn more about MSU's educational, research and extension activities and how they continue to build on a strong legacy as they improve life for people throughout Michigan.

Sincerely,

Thomas G. Coon
Director
MSU Extension

A long history of research for Michigan's future

The history of Michigan State University is closely tied to the history of agriculture, natural resources and rural communities in the state. The Agricultural College of the State of Michigan was established in 1855 because Michigan agricultural producers wanted to keep up with European farmers who were integrating more science into their agricultural production. Michigan growers lobbied for a state-sponsored school that would provide education about modern agricultural practices to help them stay competitive.

The Michigan Agricultural Experiment Station was founded on Feb. 26,

1888—33 years after MSU was founded—and the MAES has played a significant role in shaping MSU's research legacy and its priorities for the future.

We are proud to continue to fulfill MSU's land-grant mission while meeting the complex needs of the 21st century. Sir Isaac Newton said, "If I have seen further it is by standing on the shoulders of giants." By working in the light of discoveries made by early MAES scientists, current researchers are making innovations not even dreamed of in the 19th century. From hybrid corn to homogenized milk, from reducing pollution with green roofs to understanding how genomics affect

disease in cattle, and from developing kits to test for toxins in food to discovering the genes responsible for cold tolerance in plants, MAES scientists have one goal: a state with a thriving economy, environment and educational system.

Congratulations, MSU—here's to 150 more outstanding years.

John Baker
Acting Director
Michigan Agricultural
Experiment Station

John Baker



beal's best

sets the stage for how we do business.”

In 1877, this industry standard was just a twinkle in the eye of William J. Beal, an MSU researcher who, after reading Charles Darwin's 1876 book "Cross and Self Fertilization in the Vegetable Kingdom," decided to delve into the topic even further. Beal was the first to cross-pollinate corn in hopes of increasing yield through hybrid vigor. He even wrote to Darwin for inspiration—a move that Frank Telewski calls both bold and brilliant.

“Beal was impressed with the concepts presented in Darwin's book, so he wrote to him about his own research,” Telewski, professor of plant biology and curator of WJ Beal Botanical Garden, says. “He was really excited that Darwin responded. He had the letter framed and hung it on campus.”

That interaction between two great scientists may have been what prompted Beal to begin a seed germination study that is now touted as the longest continuous scientific study in history. It started in 1879 when he buried several small bottles filled with weed seeds on the MSU campus. A bottle is extracted from its secret location every 10 years, (since 1980, the interval is every 20 years) so seed viability and germination can be tested.

“When this research began, there was no such thing as Roundup-Ready anything,” Telewski explains. “Physical cultivation was the only way to control weeds. Beal wanted to know how long seeds would remain viable in a farm field before they would cease to germinate. This research remains critically important even today.”

But it isn't the depth of Beal's crop research that makes him so popular. Bob Battel, a farm management educator for MSU Extension, says it's the breadth of his work.

“When I was a student working in the plant labs at MSU, I thought it was funny that nearly every department in the college claimed Beal as their founder,” he recalls. “The more I learn about him, the more I realize that they were all right. That guy had his hands in everything!”

Beal's accomplishments include saving Michigan's struggling forestry industry by encouraging farmers who cleared land to plant trees. He established an arboretum on campus by planting 150 species of trees—some of which are still standing.

His last major forestry contribution was on Hagadorn Road across from Sanford Wood lot where, in 1896, he planted a stand of Eastern white pines that became an important destination for forestry majors as well as a romantic spot for MSU students. So much so that the dean of woman had lights installed to cut down on the hanky panky among coeds.

Beal spent his 40-year career finess-

ing plant vigor, developing hardier plants and encouraging students to cast away textbooks in favor of original investigations and their own observational skills. He retired in 1910, but the affect of his work continues to permeate through multiple academic, social and scientific programs.

“It's hard to know if Beal knew what a big deal his work was at the time,” Telewski says. “But he was definitely looking beyond his lifetime.” 🌈

William Beal touched many aspects of communities, agriculture and natural resources.

FROM HYBRID CORN TO REFORESTATION TO THOSE TINY BOTTLES OF SEED THEY DIG UP EVERY SO OFTEN, WILLIAM BEAL'S PROFOUND IMPACT ON AGRICULTURE LIVES ON.

by Beth Stuever

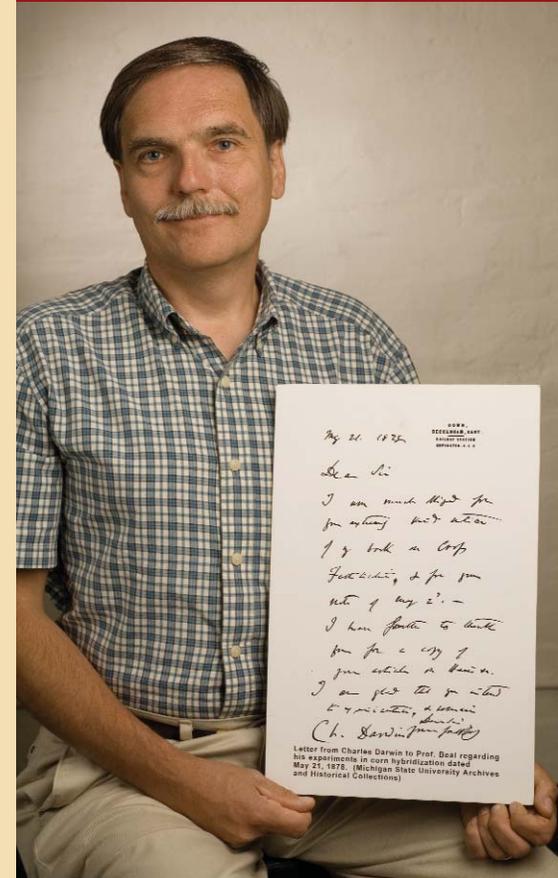
ask Steve Error about the biggest innovation in corn production and he'll give you an answer without even blinking.

“Hybrid corn,” he states matter-of-factly. “Without that, nothing else would be possible.”

Error, who farms 750 acres of fertile Huron County soil, isn't alone in his assessment. Farmers across the country built their farms on the back of hybrid corn. Yet few give the amazing innovation a second thought.

“Most people don't even think about hybrid corn anymore,” Error says. “But it

Frank Telewski holds the letter from Charles Darwin that inspired Beal to continue his plant vigor research. “Darwin inspired him and he inspired me,” he says.



keeping kids safe and healthy

WHEN CHILD PROTECTIVE SERVICES THREATENED TO REMOVE A TODDLER FROM HER HOME, THE FAMILY TURNED TO MSU EXTENSION FOR ADVICE AND COMFORT.

by Beth Stuever

In her role as a family nutrition associate for MSU Extension in Eaton County, Dottie Berkompas seldom meets women who want their children to pack on a few pounds. But that's just what happened early in 2004 when Berkompas sat down with an energetic mother who feared that her youngest daughter would be taken away from her if she couldn't find a way to help her gain weight.

"She was desperate," Berkompas explains. "Her daughter had so many physical problems that she couldn't get enough food into her delicate system. Child Protective Services told family members to find an appropriate nutritional program or they would put the girl in foster care."



Dennia, Marlena, Andy and Zoe Mix. The happy family nearly lost Zoe until MSU Extension stepped in to show the family how proper nutrition can make all the difference.

Reaching into the community

It all started during a routine nutrition lecture at a local Head-Start program. Dennia Mix was impressed with Berkompas' knowledge of food and fitness. Their paths crossed again when Berkompas took time out of her personal schedule to prepare lunch for mothers of preschoolers. After the event, Mix phoned Berkompas in hopes of getting one of the recipes she'd used that day.

"She asked me about my job and then got really excited when I told her I was a nutrition counselor," Berkompas says. "She started telling me her story, and I knew I had to help."

Autism adds to eating disorder

Mix's story involved her youngest daughter, Zoe, then 3, a toddler with multiple birth defects that limited her

ability to eat and digest food.

"She is autistic, and her handicap made it so I couldn't get the food into her," Mix explains. "She would take food into her mouth and then blow bubbles back out but never chew or swallow."

Mix temporarily solved the problem with Ensure, a low-residue liquid food designed to provide balanced nutrition for people with less-than-perfect digestive tracts. But those essential nutrients also came with high doses of sugar that rotted Zoe's teeth, further exacerbating her problems.

This dental complication, along with Zoe's other physical challenges, caused her to lose weight. And that caught the attention of Child Protective Services.

"They told me that if I didn't learn how to feed my child, they would have to



put her in foster care until she gained weight,” Mix says. “I was devastated.”

Berkompas was shocked when she heard the news.

“I saw this wonderful, energetic mother who was doing absolutely everything she could for her family,” she says. “She felt that all fingers were pointing at her because her daughter could not gain weight.”

Working together, Mix and Berkompas designed a nutritional program that incorporated all the key food groups. They turned to the Family Nutrition Program’s *Eating Right is Basic*—an easy to follow recipe book with 170 low-cost recipes and information about calories, fat and nutrition. There, they found foods that were not only nutritious but also interesting and eye-appealing, in hopes that Zoe would eat more.

“We started with a macaroni and chicken fruit salad,” Berkompas says. “It’s got all the right nutritional elements, is soft and easy to eat, and it’s got great colors – green grapes, yellow pineapple and mandarin oranges.”

Mix was thrilled.

“Zoe hadn’t been feeding herself, but with a little work, she started picking up the food, chewing it and swallowing. It was amazing.”

The result was a happier, healthier child who gained enough weight to have a key dental procedure that will aid in her long-term health.

“I worked with Dottie for 16 weeks, and Zoe put on 16 pounds,” Mix says. “The doctors were thrilled, and I got to keep my baby at home where she belongs.” 🇺🇸

Dependable daycare, close to home

In some ways, Janie Brewer is a typical grandmother. She takes care of her grandchildren while her adult daughters head off to work every day.

But that’s where the similarities stop.

Brewer is more than just a loving grandmother. She’s a 15-year veteran of the childcare business who knows that good supervision goes beyond playing games and stopping arguments among kids. That’s why she decided to quit her job and open an in-home childcare facility to care for her three grandchildren and her brother’s two children as well as her own toddler-age daughters.

“Both of my daughters have different hours, so they could be working early morning or late into the evening,” says Brewer, the mother of five. “If I wasn’t able to care for their children and be flexible, I don’t know what they would do.”

The Saginaw County MSU Extension staff recognized that the problem of inadequate childcare was especially prominent in Saginaw’s Houghton Jones Neighborhood. This economically challenged area where Brewer lives was once plagued by crime and poverty. There, MSUE helped develop the Saginaw Family Child Care Network (SFCCN), a group of former and current childcare providers working to ensure there are good daycare options in their community.

The network was developed using Better Kid Care, a childcare training program offered through MSUE Family and Consumer Sciences. The program not only improves caregiver skills in existing providers but also actively tries to bring new providers into neighborhoods like

Brewer’s.

April Bady, Saginaw County MSUE’s Better Kid Care educator, says that before SFCCN, providers had trouble establishing their businesses because they couldn’t meet the minimum in-home daycare standards required by law.

“In some cases, they were renting their homes and couldn’t convince the owner to do the appropriate maintenance. In other cases, they just didn’t have the funds to update their own homes,” Bady explains. “Among other things, the Saginaw Family Child Care Network offers an individual account program. Providers can save some money and the network will match it as long as the funds are used for education, housing or business expansion.”

Matching funds come from local private

organizations and Michigan IDA Partnerships, the Catholic Campaign for Human Development and block grants.

The strength of the Better Kid Care program and SFCCN goes well beyond childcare providers. It extends to numerous families who now have safe, reliable childcare options.

“In this area of Saginaw, there were very few childcare options,” Bady explains. “Before, children were being left unsupervised while their parents went to work or their parents weren’t able to go to work. This gives people who want and need to work more choices that are affordable and convenient.”

The network has become a model for other programs across the state.

“Saginaw serves as a template,” Bady says. “Our goal is to get this type of program in every county where it makes sense.”

Kids in Saginaw’s Houghton Jones Neighborhood now have safe, fun daycare options, thanks to MSU Extension’s Better Kid Care Program.



rieslings and ponies and cheese, oh my!

by Laura Probyn

BLACK STAR FARMS DRAWS TOGETHER ELEMENTS FOR SUCCESSFUL NORTHWESTERN MICHIGAN AGRITOURISM.

You don't have to tell Don Coe that he looks at things backwards. The managing partner of Suttons Bay-based Black Star Farms, with partner Kerm Campbell and winemaker Lee Lutes, chose to open a northwestern lower Michigan winery in 1998 because of the area's high demographics for wine drinkers, only secondarily for the exceptional wine grape-growing conditions. He knows that he doesn't look at things as other farmers do.

"We tend to look at agriculture as, 'What can we sell to consumers?' then, 'Can we produce it at the farm?' We start with the consumer and work backward," Coe says. "We're always asking, 'What more can we do to add value?'"

It's a question that they seem to have found many ways to answer. Black Star Farms, a self-titled "agricultural destination," includes a winery, distillery, creamery, bed-and-breakfast, horse boarding and training barns, orchards and vineyards.

"We wanted to demonstrate we could keep farms in business in this area,

and everything we do is about redefining agriculture for the small family farm," Coe notes. "We are bringing people to the farm through two legs of our business: value-added agriculture and agricultural tourism."

And bringing people they are. Sixty thousand visitors come to the farm each year to taste the award-winning wines and Leelanau Cheese Company cheeses, lounge at the inn or sit and watch the horses grazing in the sloping pastures.

"There are other operations that have done a nice job of combining agriculture with tourism, but Don is exceptionally good at looking for opportunities and then acting on them to improve that connection between ag and the non-ag community, whether it's locals or visitors," says Jim Nugent, MSU Extension district horticultural educator and coordinator of the nearby Northwest Michigan Horticultural Research Station.

Horse sense pays off

Coe's philosophy about the horses provides more insight into what makes Black Star Farms different from other agribusinesses. He's not an equine aficionado, so you won't find him out plaiting manes or polishing hooves, but you will hear him talk eagerly about a byproduct that few others enthuse about.

"Horses are a manufacturing machine. We are interested in what comes out of them. We make a compost that is produced by mixing manure with the residue of our other products," he

says. "The compost is valued by area nurseries, and we use it on the farm. We grow hay and sell it to the boarders as feed, we don't pay input and get free output."

With annual sales of roughly \$2 million, Black Star Farms is the kind of operation that many entrepreneurs would sit back and call a success, but Coe and company aren't doing any sitting. In addition to producing more than 20 wines and distilled spirits and maple syrup and providing the facilities for the separately owned Leelanau Cheese Company, they are always looking for opportunities in the agricultural products and tourism arenas.

"Anyone in agriculture today who doesn't spend more time thinking about the customer than what they're growing is missing the boat," he says. "You've got to get into the marketplace and sell your product."

Black Star's successes have included winning numerous awards in international wine competitions. Its A Capella

"We're always asking, 'What more can we do to add value?'"



Don Coe says he doesn't look at things as other farmers do.



Riesling ice wine has been served at the White House, as was Sirius Maple, an apple wine fortified with apple brandy and sweetened with maple syrup, which the White House pastry chef called the “quintessential American product.”

Land-grant legacy lends insight

Since he and his partner purchased the 160-acre property overlooking the west arm of Grand Traverse Bay in 1998, Coe, who did not come from an agricultural background, has called on the people and programs of Michigan State University while building a diverse operation.

“He understands how the university can be utilized to help people in communities through the land-grant mission and is a strong supporter,” says Jim Bardenhagen, Leelanau County MSU Extension director. “He’s seen Extension at work and is amazed at how the ‘green machine’ can get rolling.”

Coe spent 25 years in the consumer products industry, but his education at Cornell University gave him an appreciation for all aspects of the land-grant system.

“I graduated from a land-grant college and understood its mission,” he says. “I appreciate that it’s about extending technology to the farmer and not requiring him to find it on his own.”

More than a business

Coe also appreciates the importance of community. Black Star Farms hosts the Leelanau County Sheriff Department’s mounted division and serves as the

group’s training headquarters. The barn is also home to the Leelanau County Equestrian 4-H club. He doesn’t see Black Star as simply a business.

“We’re a demonstration property. We wanted to demonstrate we could keep farms in business in this area,” he says. “Everything we do is about redefining agriculture for the small family farm, all of it requiring growing, processing, retail and marketing, all on the farm.”

Coe has been very involved in farmland preservation efforts, especially for family operations, and is looking ahead to what successful northwestern Michigan farms will look like in the future.

“It’s really a question of finding intensive enough crops,” he says. “You need 350 to 400 acres of cherries to support a family of four. You need only 40 acres of grapes. Hydroponics, greenhouses, organics or intensive processing of jams, jellies, preserves; I think nutraceuticals will also be big.”

Whether Don Coe’s looking straight ahead or taking the backwards approach, a joint commitment to business and community seems to be a recipe for success at Black Star Farms.

“Don is so committed,” Nugent says. “It’s not a shallow commitment, it’s down to the depth of his soul, and that passion comes through in what he does and how he does things in a very positive way.” 🌈

pumping up pear profitability

When grower Mike Mikowski couldn’t get more than \$.04 per pound for the Bartlett pears he was growing in a 12-acre orchard, he went to Black Star to find out if the site had potential as a vineyard.

Black Star’s winery staff discovered the orchard didn’t have the slope or soils that are conducive to grapes, so they worked to come up with an innovative use for the pears that would make it worth Mikowski’s time to grow a crop each season. The result is The Spirit of Pear, a premium brandy that includes a whole pear in every bottle.

Each spring Mikowski heads to the orchard when the pears are small. He finds the dominant pear on each branch, trims off other fruit and affixes a bottle over the dominant pear. When the pear is grown, he cuts the branch and the entire product heads off to Black Star.

The staff there removes the leaves and debris, cleans the pear and then fills the bottle with a distilled pear brandy made from the remaining pears from the orchard.

Mikowski formerly sold his pears for less money than it cost him to produce them. Now he makes \$5 for each pear grown in a bottle in addition to the money he makes on the rest of the orchard.

“It’s profitable for him because he’s done something different,” Coe points out.





4-H members from Calhoun County wrote and recorded the song "Living the Dream."

when Harry met Sherry

4-H WORKS FOR
DIVERSE YOUTH
THROUGH CHANGE
AND TRADITION.

by Michelle Lavra

When Harry Bonner, director of Minority Program Services in Albion, received his first phone call from Sherry Grice, 4-H Youth Development educator in Calhoun County, more than 25 years ago, his initial reaction was to dismiss her. After all, what could an organization with the “cows and cooking” reputation of 4-H have to offer the youth he was working with in Albion, who were often economically challenged and living in a more urban environment than the “traditional” 4-H setting?

But Grice knew 4-H was about helping kids find their own potential, and it didn't really matter if they found it through raising an animal, performing

arts, leadership training or career preparation. She persisted and made Bonner a deal—bring kids to 4-H Exploration Days on MSU's campus, and if he didn't think 4-H could help, she'd never call again.

“We've been together ever since,” Bonner says. “I learned you should never say ‘no’ without hearing what someone has to say, and you should never set limits on yourself without first exploring what the possibilities are.”

Exploring possibilities

Since 1987, 4-H and Minority Program Services, along with other Calhoun County youth organizations, have participated in the Kellogg Youth Initiative Partnership, funded by the W.K. Kellogg Foundation. Through this initiative, Albion programs work to increase the number and quality of “gap” activities—out-of-school activities that help young people build specific personal skills.

In a 1997 study by the Search Institute, youth involved in high-quality gap activities have lower alcohol use (2 percent vs. 53 percent), drug use (4 percent vs. 43 percent), sexual activity (4 percent vs. 43 percent) and involvement in violent activities (4 percent vs. 57 percent) than the youth population in general. These gap-involved youth were also more successful in school and better at maintaining good physical health, and they placed a higher value on diversity.

Marquetta Frost, current MSUE Ingham County 4-H Youth educator, is a beneficiary of 4-H's brand of gap activities in Albion. Like many young people

in Albion, Frost faced many difficult issues growing up. But her involvement with Grice and Bonner gave her a consistent, caring adult presence that helped her believe in herself and make positive choices.

“I wouldn't be caught dead on what we called ‘the corner’ as a teenager because I knew Mr. Bonner would see me, and I wouldn't know what to say,” Frost remembers. “That wasn't the place for me to be because I was expected to do better.”

Through music and the performing arts, Frost boosted her self-esteem. She and others in her 4-H club found they could use those special gifts to give back to the community as they performed in area schools.

When Frost graduated from high school, she almost didn't go to college, although she badly wanted to. But she was working and felt her economic situation prevented her from going to school. Grice, however, encouraged her to look beyond her current situation and set a goal for her future.



An Albion youth explores career ideas with help from Sherry Grice.



Harry Bonner connects with a group of Albion youth during an outdoor education program.

“She made me believe in myself,” Frost says. “I wouldn’t be in this 4-H position without Sherry and the things I learned through 4-H.”

Grice says one of the keys to success is consistency and long-term commitment. Programs that last six weeks and then are gone offer little chance of success for young people who live in challenging environments.

“You can’t run into a neighborhood and run back out,” she advises. “They’ve had too many promises over the years. You have to be consistently visible.”

The 4-H Legacy lives on

What inspires Marquette Frost and so many others to give back to the pro-

gram by working with new generations of 4-H youth? According to Carol Hansen, former superintendent of Albion Public Schools, 4-H works because “the young people who have worked with Sherry and Harry have the ability to be leaders as young people. Second, they go away with very strong life skills. They’ve learned how to resolve conflict and how to make good, strong decisions that are going to help them be better in the world.”

According to Grice, the answer to 4-H’s success in Albion is simple. “Many people talk about 4-H projects and going to the fair as being the ‘core’ of 4-H,” Grice says. “But for me, the youth are the project. It’s always been about the youth.”

4-H mentoring programs change lives of youth and mentors

by Megan Townsend

When Gov. Jennifer Granholm and First Gentleman Dan Mulhern founded Mentor Michigan – a program working to ensure that every young person has an ongoing relationship with a stable, caring adult – Cal Steele was just the kind of person they had in mind.

Steele, a 79-year-old retired engineer from Spring Lake, has been working with youth through the Ottawa County MSU Extension 4-H program for years.

“I owe this community something,” he says. “So, it’s sort of like a payback, but also a concern with the problems youth face. They deal with situations I never had to when I was growing up.”

With mentoring programs in 22 counties, MSU Extension and Michigan 4-H are helping Mentor Michigan achieve its mission of matching the state’s more than 2,300 youth on waiting lists with mentors.

The mentoring programs established through the Explore, Experience, Achieve Through 4-H Mentoring Program take an organized approach of mentoring as a way to reach currently underserved youth. By the end of the year, organizers hope to train 600 adults and pair them with 1,800 vulnerable youth for positive experiences in counties across the state.

The Ottawa County Journey Youth Mentoring Program, initiated in 1992, is one of the longest running MSU Extension-

based mentoring programs. Consisting of approximately 35 mentors, including Steele, the program aims to reduce recidivism in delinquent youth ages 8 to 17.

“Our quality of service is consistent and slightly above the national average. Our relationships are lasting longer than the national average, too,” says Lisa Bottomley, Ottawa County Extension educator for 4-H mentoring who serves on the Mentor Michigan Providers Council. “Sure, we’re saving the community money by keeping kids out of detention centers, but we’re also giving kids hope and the skills they need to succeed.”

In addition to weekly one-on-one meetings with their mentors, mentees attend life-skills training sessions monthly. MSUE and AmeriCorps staff members lead workshops on health and nutrition, conflict resolution, self-esteem and communication skills.

“Our goal is to double Journey’s case-load,” Bottomley says. “I see us moving up to between 50 to 60 cases, depending on the intensity of each mentee’s needs.”

Steele received Michigan’s first Outstanding Mentor Award. “It’s not just the mentee you’re confronted with,” he says. “It’s everything—the family, problems in school—but it’s all just part of mentoring, and I can’t think of a better way to spend time.”





“brewing” success in Rapid River

by Michelle Lavra

Cuppa Jo Java House is more than just a place to get a great cup of coffee. It is a community gathering spot for both youth and adults and the dream of the Intrepid Teen 4-H Club in Rapid River.

This group of 30 teens wanted to create a place where people could share conversation, fellowship and fun. They made their dream a reality on January 29, 2005, when Cuppa Jo opened its doors.

A youth-run small business, the coffee house started when club officers found a site, met Michigan Department of Environmental Quality regulations and developed a business plan. From there, the club members engaged in an aggressive fund-raising effort, generating more than \$37,000 in grants and donations. Money in hand, the youth received training in small business administration, customer service, food service, environmental health, marketing, hiring, retailing and more. All club members work in the coffee house at least four hours per month, with community volunteers manning Cuppa Jo for additional hours.

In April, weekly sales at Cuppa Jo Java House broke \$1,000, putting the Intrepid Teens well on their way to their goal of \$1,200 in weekly sales. They'll use their profits to hire additional staff members for the coffee house and use the

remainder for community service projects. For a start, they want to set up an endowment for nonprofit organizations that emphasize youth programs.

“The Intrepid Teens 4-H Cuppa Jo Java House is making a huge impact in Delta County,” says Dave Radloff, MSUE Delta County 4-H Youth educator. “Members are receiving hands-on business education and work experience, in addition to providing a safe place for all members of the community.” 🇺🇸

Erica Corden whips up a cappuccino at Cuppa Jo.





bovine benefits

NEW DAIRY TRAINING CENTER GETS VETERINARIANS READY TO RUN WITH THE BIG DOGS... AND COWS.

by Beth Stuever

In 1986, more than 45 percent of the members of the American Veterinary Association cared for large animals. By 2004, that number had plummeted to 22 percent, with only 4 percent treating large animals exclusively. Those aren't numbers that Michigan State University takes lightly.

MSU's long tradition of having one of the premier veterinary training programs in the world makes it imperative

that the College of Veterinary Medicine (CVM) continue to ensure that animal agriculture has trained professionals available to treat sick farm animals. That's why CVM partnered with Green Meadow Farms to create the top-notch Training Center for Dairy Professionals, which will give budding veterinarians valuable experience working with dairy cattle in a real-life setting.

MSU veterinary students have been sharpening their skills at Green Meadows for years. Charged with such tasks as dehorning calves, repairing displaced abomasums and treating sick cows, students have gained valuable experience that will serve them well upon graduation.

The training center, which was dedicated in July, is a unique public-private partnership between Michigan State University, Green Meadow Farms and corporate sponsors, including Land O'Lakes Purina Feed and GreenStone Farm Credit Services. It strengthens the bond between the farm and the university and brings benefits to both parties, allowing more students to work at the farm and learn about large commercial dairy operations.

In addition to computers and classrooms, the new facility features office space for professors and accommodations for overnight guests.

Most important, the center will address a growing shortage of large-animal veterinarians and the need to prepare such veterinarians with knowledge of the management, business and personnel aspects of large dairy farms, as well as the medical and biological aspects of cow health.

CVM leaders hope this hands-on experience will persuade more students to consider large-animal medicine and thereby help chip away at the veterinarian shortage that, in part, reflects the decline of the traditional rural lifestyle. As the number of farms shrinks, so does the pool of veterinarians who grew up in the country around cows and pigs.

"The majority of veterinary students today come from urban centers, and that's where they want to live," said Janver Krehbiel, CVM senior associate dean.

In 1994, 36 percent of new veterinary school graduates in a nationwide survey said they would treat large animals

at least part time. Last year, only 25 percent were willing. This creates huge problems for farmers, especially in northern Michigan, where large-animal vets are few and far between. The good news is that the jobs are there for students interested in taking on the responsibility.

"The shortage of large-animal veterinarians in the United States creates good employment opportunities for graduates in this area," said Lonnie King, dean of the College of Veterinary Medicine.

In addition, Dr. King cites a national shortage of veterinarians trained to conduct basic biomedical research. "There are many career opportunities available for veterinarians." 

Velmar Green, right, gives MSU President Lou Anna Kimsey Simon a tour of Green Meadows Farms after a ribbon cutting ceremony celebrating the new Training Center for Dairy Professionals.



unwanted guests

MSU SCIENTISTS PARTNER WITH COMMUNITIES AND STATE AGENCIES TO KEEP INVASIVE SPECIES AT BAY.

by Robin Millsap, Joy Landis and Carol Swinehart

When it comes to invasive species—be it plant, animal, insect or pathogen—eyes often turn toward Michigan. As a hub of waterborne commerce and a destination for thousands of tourists annually, Michigan, with its diverse plant and animal habitats, inadvertently attracts unseen, and often unwelcome, visitors.

These invaders pose important environmental and economic challenges. Their presence can result in increased use of pesticides, and the losses to productivity and ecosystem services can cost the United States more than \$137 billion per year. The short list includes soybean aphid, emerald ash borer, garlic mustard, West Nile virus, purple loosestrife, zebra mussels and beech bark disease.

In late 2004, MSU gathered numerous faculty and staff members with interest in invasive species and began developing a multidisciplinary invasive species program. This program integrates research, outreach, regulatory and teaching efforts campus wide. For many years, the university has worked in tandem with communities, state and federal agencies, other universities and organizations to negate or alleviate the effects that these invasive species have on Michigan and the United States. Their research, out-

reach and education efforts span an international audience.

What's happening to the ash trees?

Arborists and urban foresters in southeastern Michigan began asking that question before the beginning of the 21st century. In June 2002, the answer came in the form of a one-inch, metallic green, wood-boring beetle that had never before been seen in North America. The emerald ash borer, or EAB, had been silently and swiftly infesting and killing sick and healthy ash trees for years before being detected, its tree-strangling larvae silently working under the bark.

MSU, the Michigan departments of Agriculture and Natural Resources, the U.S. Forest Service and the U.S.

Department of Agriculture (USDA) quickly rallied to try to contain and eradicate the pest. Assumed to have been brought in through the ports of Detroit and Windsor on wood packing material, emerald ash borer was initially found in six southeastern Michigan counties. To date, it has killed more than 15 million ash trees in Michigan, Indiana and Ohio. The country's entire ash tree resource—more than 8 billion trees—is at risk.

Collaboration has been key in dealing with EAB. The EAB Science Advisory Panel, Communications Committee, Task Force and Executive Board are made up of representatives from the aforementioned entities, all of whom work together to make the decisions necessary to try to control this pest.

The purple plague

Purple loosestrife, an Eurasian herbaceous perennial, is an invasive plant that can crowd out most native vegetation in marsh, sedge meadow and wet prairie communities in the United States, creating a near monoculture that provides little food or shelter for native wildlife. A single stalk can produce 300,000 seeds, and densities as high as 80,000 stalks per acre have been recorded, with the potential to produce as many as 24 billion seeds per acre. This pest is found in almost every state. It is widespread in many counties in Michigan and will try to grow in any wetland.

Students and teachers fight back

Scientists in Michigan have found that the *Galerucella* beetle suppresses purple loosestrife three to five years after

Researchers use tweezers to collect and study emerald ash borer.





MSU entomologist Deb McCullough checks a testing net on an ash tree at the University of Michigan's Mattai Botanical Garden, where MSU shares space to help conduct work against the emerald ash borer.

Muscling out natives

Zebra mussels became a most unwanted species in the state when they were implicated in shutting down the Monroe water treatment plant in the late 1980s. The Michigan Sea Grant College Program, a cooperative Great Lakes research, education and outreach program of MSU and the University of Michigan, has supported research on their life history, reproductive system and other important factors that contribute to their invasive potential. MSU scientist Orlando "Ace" Sarnelle and his colleagues have learned that lakes infested by zebra mussels have an average of three times more microcystin than uninfested lakes. Microcystins can be very toxic to plants and animals.

Aquatic invasive species such as these zebra mussels are often introduced to the Great Lakes when ships dump ballast water. They can quickly change the ecosystem and harm native species.



it is introduced. In 2003, researchers led by MSU entomologist Doug Landis reported that the Galerucella beetles had established large populations in three mid-Michigan locations and caused 100 percent defoliation of purple loosestrife. By 2005, similar results were common in the southern half of the state. Landis says biological control is working in Michigan, and there is evidence that varieties of native plants are making a comeback.

Since 1997, students, thousands of teachers, naturalists and volunteers throughout Michigan have released Galerucella beetles in more than 300 locations as part of the Purple Loosestrife Project. Participants obtained a small number of beetles from MSU or from the USDA laboratory in Niles, and after rearing for an additional generation, released them in stands of loosestrife.

Sea Grant Extension (SGE) conducted conferences for industries, municipalities, marinas and other facilities that were trying to cope with the invasion of zebra mussels at a time when research and development of control strategies in North America were in the very early stages. Extension specialists and agents also collaborated with organizations such as the Michigan Office of the Great Lakes to conduct educational programs and to produce and distribute educational materials. SGE also developed a system of monitoring the mussels' spread to more than 200 lakes throughout the state.

Sea Grant colleagues from Michigan and other Great Lakes states persuaded aquaculturists and baitfish harvesters and dealers that it would be much easier to prevent an invasion than to attempt to control one once it had started. They developed and offered a Hazard Analysis Critical Control Point (HACCP) program that these businesses could use to help ensure that their operations would not inadvertently introduce a harmful species into the state's waters.

What Sea Grant began as a regional approach in the late 1990s has been adopted by the U.S. Fish and Wildlife Service and is being used by many state and provincial agencies and organizations, too, along with the original business audience.

The war against invasive species and biological pollution is far from over, but the strategies developed and used by Sea Grant in Michigan are helping people in other states and nations. 🇺🇸

Diagnostic Center protects both animal and human health

When airplanes hit the World Trade Center and the Pentagon on September 11, 2001, Americans realized just how vulnerable they could be during an attack from the outside. The day after that tragedy, Michigan politicians and Michigan State University officials took a step that helps ensure safety when a different kind of enemy is right under our noses.

The group gathered in an empty field on the southern side of the MSU campus to break ground for the Diagnostic Center for Population and Animal Health (DCPAH). Now, a state-of-the-art building filled with well-trained professionals charged with keeping humans and animals safe from epidemics and harmful diseases sits on that site. Though there are numerous human health labs, the DCPAH is the only comprehensive diagnostic lab for animal health in the state.

The lab was established in the mid-1970s to determine the cause of an unprecedented number of deaths on Michigan's dairy and cattle farms. Diagnostic tests revealed that PBB, a fire-retardant chemical that had been inadvertently mixed into cattle feed was the culprit.

Since then, the DCPAH has gained international acclaim and has broadened its base to become an invaluable tool in helping identify and track emerging animal- and public-health issues such as bovine tuberculosis, West Nile virus, chronic wasting disease, rabies and Lyme disease.



beyond cows and plows

Leyna Dussel is putting her traditional agriscience experience to work in a very non-traditional school system.



WITH STRONG PROGRAMS IN URBAN AREAS, FFA ALSO STAYS TRUE TO ITS ROOTS.

by Beth Stuever

In a struggling economy leaving many college graduates fighting for jobs, Leyna Dussel considers herself among the lucky. She landed a teaching job in suburban Detroit three weeks before she finished her student teaching.

Not bad for a woman whose career started on a dare.

Dussel was a seventh grader on the school bus when another student goaded her into joining an FFA contest team.

“He kept taunting me, telling that I wasn’t smart enough to do it,” Dussel recalls. “In hindsight I realize that he knew I was just stubborn enough to take that as a challenge.”

The challenge paid off. Both Dussel and the school-bus bully went on to win the Junior High Conduct of Meetings contest. A few years and several agriscience classes later, Dussel was part of a team that won the state Parliamentary Procedure contest.

“FFA taught me the value of hard work and determination,” she says. “That’s why I became a teacher. It’s what I love.”

Dussel’s new role as agriscience teacher and FFA advisor for Warren Consolidated Schools finds her miles away from the rolling farmland of her native Cassopolis, known for its hog farms and open fields. The district is a conglomerate of 25 schools, with Dussel’s job centered at the Career Preparation Center in Sterling Heights. There, she teaches landscape design and management to high school juniors and seniors, many of whom are Kaldean or Arabic. Dussel has high hopes of heading up an active FFA chapter that will also teach confidence, leadership and communication.

“I was just a typical shy kid when I joined FFA,” she says. “I kept progressing through FFA, taking on new challenges. I became more confident, more independent. I want my students to have that same experience.”

Strong leadership, strong work force

Dussel is just one of thousands of former Michigan FFA members who have gone on to play key roles in—and out of—Michigan agriculture. Dave Wyrick is still amazed at how often he runs into former members.

“We don’t have any official records of all the alumni from Michigan programs,” says Wyrick, FFA projects consultant. Many chapters have alumni associations, but only paying members are tracked through the system. “I’m sure there are tens of thousands of former members out there.”



Randy and Marcy Petroschus work hard to stay connected with the youth in and around Petro Farms in Gobels.

Wyrick, who taught agriscience for 22 years and was a high school principal for seven before being named FFA projects consultant in June, says former students end up in all walks of life—from Navy pilots and politicians to university researchers and writers. Many use skills obtained in agriscience classes and FFA to run their own businesses.

“We really encourage entrepreneurship,” he says. “We teach students how to manage money and work with people. It’s natural for some of them to go into business for themselves.”

But Wyrick’s quick to point out that membership has its privileges in other pursuits, too.

“I’m sure our strong focus on leadership and communication skills is a big part of why we see a lot of community leaders from our ranks,” he says, noting that the FFA’s

FFA’s virtual honor roll includes governors, senators and local community leaders.

virtual honor roll includes governors, senators and local community leaders.

“And, of course, we have students from farm backgrounds who go back to the farm, too,” he says.

From student leader to dairy farmer

Randy Petroskus is one of those students.

Petroskus, a 31-year-old Allegan farmer, felt agriscience and FFA were so important that he spent the better part of his junior and senior years in high school

commuting to another school.

“I went to high school in Allegan, where there were no ag classes and no FFA,” he says. “So I went to Hopkins for an hour every day so I could get involved. It was a big part of my education.”

Petroskus’ efforts paid off in 1995 when he became the American Star Farmer—one of the National FFA Organization’s highest honors.

“It was an amazing experience,” he recalls. “I traveled around Europe for 11 days with other national award winners. We learned so much at every city, busi-

ness and university stop—I would have never had that kind of opportunity if it weren’t for FFA.”

Petroskus says those experiences, combined with an MSU education in dairy technology, gave him the confidence and skills to turn his family’s 150-cow dairy into an 800-cow facility with 13 full-time employees and seven seasonal workers.

If that isn’t enough, Petroskus is a 4-H leader in dairy and beef. He and his wife, Marcy, helped start a cow camp at Camp Kidwell—a 4-H youth camp just a few

miles from their home in Gobles.

“We do a lot of educational classes on cows and dairy products,” he explains. “I wanted to give kids experience so they could understand what goes into the dairy industry. Kind of my way of sharing all the things I’ve learned over the years.” 🇺🇸

Multicultural Apprenticeship Program opens up opportunities

by Kirk Heinze

In typical MSU fashion, why not take a tough problem and turn it into an opportunity that dramatically transforms lives? That is exactly what happened when the Multicultural Apprenticeship Program (MAP) was launched in 1983.

The problem: too few minority students were aware of career opportunities in agriculture and natural resources. The solution: a novel, six-week precollege program that lets high school students experience campus life while exploring exciting educational and career opportunities in the agricultural and food sciences, natural resources and related fields.

Co-sponsored by the CANR and the College of Veterinary Medicine, MAP celebrat-

ed its 23rd anniversary this past summer. Under the early leadership of Donald Wallace and Marquita Chamblee, and now Leonard Savala, the program has clearly fulfilled its promise.

“In addition to its impact on individual lives, MAP helps create a more diverse university,” says Savala, director of CANR Undergraduate Diversity Programs. “That expands and enriches us all.”

Savala explains that 25 to 30 tenth and 11th graders are selected each year through a competitive process that includes a statement of interest, academic performance, and recommendations from teachers and counselors.

On campus, each MAP participant spends several hours each week developing and com-

pleting a research project with an MSU faculty member.

“My mentor spent a lot of time helping me learn about biosystems and agricultural engineering,” recalls Jennifer Sowa, outreach specialist for the CANR Office of Diversity and Pluralism. She recently completed her MBA and has mentored MAP students for the past three years. “The most important thing I can do is give back, and I hope the program has as much of an impact on the students I have mentored as it did for me.”

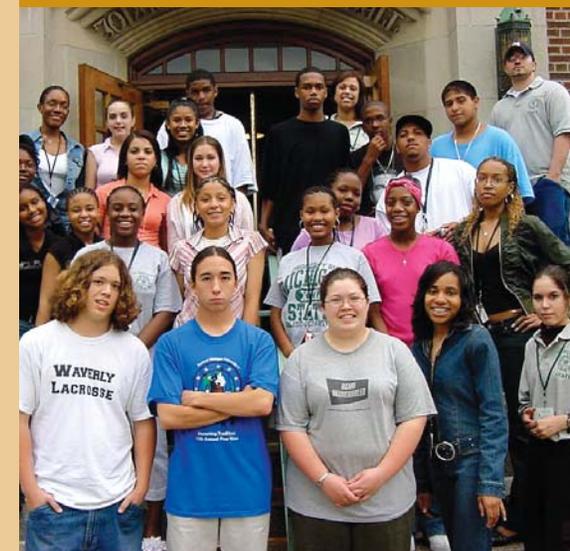
Daryl Allen, product manager for DuPont’s Forestry and Vegetative Products Division, believes the spirit of cooperation presented in MAP was an early key to his success.

“It is important to help others move along the pathway of life,” he says. “MAP exposed me to agriculture and helped me decide to attend MSU and major in horticulture.”

Both Sowa and Allen believe MAP is an extraordinary experience.

“It brings people together and bonds them as lifelong friends,” Sowa says.

Each year, 25 to 30 students participate in MAP.



Launched nearly three years ago by the Michigan Coalition of Black Farmers (MCBF), the Chene Ferry Market initiative had a goal of turning a defunct recycling center into a bustling market.



turning business dreams into a reality

by Jamie DePolo

Starting or expanding a company can be daunting for new entrepreneurs and established business people alike.

How to write a business plan? How to get funding? What to call the product? Is anyone else selling a similar product? How to advertise the product or services? What should the packaging look like?

For those starting businesses in agriculture and natural resources, the MSU Product Center for Agriculture and Natural Resources is here to help. Acting as a single doorway to Michigan State University's vast array of knowledge and expertise, the center helps guide clients through the phases of conceptualizing, planning and actually starting a business. It's the land-grant mission with a 21st century entrepreneurial twist.

In its first two years, the Product Center assisted 125 venture projects, nine of which have become new businesses or business expansions.

Revitalizing agriculture, revitalizing Detroit

On the corner of Chene and Ferry streets, on the east side of Detroit, about a quarter mile away from the General Motors Poletown Plant, an agricultural revolution is quietly taking place. An effort to refurbish a defunct farmers' market to help revitalize the area is turning a roadblock into an opportunity.

It's the land-grant mission with a 21st century entrepreneurial twist.

The Branches of the Vine Food Buyers Cooperative is making fresh produce available to low-income residents in the East Side neighborhood who are without a nearby grocery store.

The farmers' market initiative was launched nearly three years ago by the Michigan Coalition of Black Farmers (MCBF). The group approached Mike Score, Washtenaw County MSU Extension ANR educator and MSU Product Center innovation counselor, about creating a link between agriculture

and urban consumers. The MCBF hoped to refurbish the Chene & Ferry Municipal Public Market—a fixture in the neighborhood for more than 40 years before it was converted into a recycling collection center that closed permanently in 1988—into a market where neighborhood residents could buy fresh produce and other horticultural products. Until recently, the community's only source for groceries within a 7-mile radius was a convenience store.

The MCBF, with help from Score and the Product Center, reopened the Chene Ferry Farmers' Market in September 2004. Under the original plan, Score and local groups would manage the market and the MCBF would act as the go-between with wholesalers. After about three months, however, the organizers realized that they had underestimated the amount of time and money needed to make the market completely functional.

It was at this point that the MCBF initiated discussions with Branches of the Vine Food Buyers Cooperative, a local food organization managed by Peacemakers International Ministries.



Sheila Payne grows greens in her urban garden to sell to the Branches of the Vine Buyers Club. She hopes to open a small restaurant and catering business one day.

Ralph King, executive director of the Branches of the Vine Food Buyers Club and member of the Coalition of Black Farmers, talks to farmers in Washtenaw County in hopes of lining up suppliers for the club.



Now area residents can place their grocery orders at the Peacemakers International Ministries on Chene Street from Monday through Thursday and pick them up on Friday. The cooperative, completely staffed by volunteers, buys its food in bulk from a wholesaler to fill the orders, which are sorted and packaged for each customer.

“Members of the community are very excited about the cooperative,” Score said. “Some residents have even talked about starting urban gardening projects to help fill orders for the local community.”

The cooperative will purchase as much produce and as many horticultural products as it can from farms in Washtenaw and Lenawee counties. Food that cannot be grown locally will be shipped in from farms in neighboring regions.

“The cooperative supports community agriculture,” Score said. “The goal of this initiative is to provide local residents

with access to wholesome, nutritious food for less than what it would cost them to purchase similar products at the grocery store.”

Fulfilling a dairy product dream

Karen and Rick Batora are no strangers to the dairy industry. They are active in Green Meadows Farms—a 4,000-cow operation near Elsie that has been in Karen’s family for several generations. But the couple wasn’t satisfied with their small role in the large operation. They wanted to take the next step by opening their own market to sell cheese, ice cream and other dairy products, as well as offer visitors a chance to see how food is made and learn about the dairy industry.

“The rest of the family didn’t want to go in that direction, so we decided to do it on our own,” Rick explained.

In June 2004, after assistance from the MSU Product Center, the Batoras realized their vision and opened the DaisyDell Farm and Market in St. Johns. The market sells farmstead cheeses and ice cream and includes a deli and café with a bakery that sells coffee, soups and sandwiches.

The Batoras, both MSU alumni, are planning to build a cheese processing plant and begin making their own cheeses. They also want to add their own cows to the operation and offer visitors a chance to get up close and personal with the animals in a petting zoo.

The Product Center connected the Batoras with John Partridge, MSU associate professor of food science, who specializes in dairy product development.

“Dr. Partridge was very helpful,” Rick said. “He advised us on the type and size of equipment needed for an operation our size. We have an on-going relationship with him and it’s been great.

“Our passion is agriculture education,” he continued. “We want to present agriculture in a positive manner and show people where their food comes from. It used to be that your grandpa had a farm and kids would visit and learn about agriculture. Now most people live in the city and have never touched a cow.”

A mission to help Michigan entrepreneurs

The MSU Product Center for Agriculture and Natural Resources began as a gleam in Chris Peterson’s eye in 1998. Peterson, an MSU agricultural economics professor, holds the Homer Nowlin Chair for Consumer-Responsive Agriculture. He is known for his research on agribusiness, marketing and strategic management.

“In 1998, I wrote a proposal that called for doing a series of studies on how best to position plant agriculture in the food system, with an eye toward value-added and specialty goods,” he recalled. “Agriculture is the second largest industry in the state, but many rural areas continue to be economically depressed. Converting agribusiness from a commodity orientation—such as selling dry beans to a processor—to a differentiated product orientation—like producing a value-added bean dip from the beans and keeping the processing money in the state—will help revitalize Michigan agriculture.”

He and his colleagues wrote and rewrote planning documents and budgets as the project evolved. In February 2003, the MSU Product Center for Agriculture and Natural Resources was funded for five years, and Peterson was named its director.

The center’s goal is to improve economic opportunities in the Michigan agriculture, food and natural resource sectors, and its experts are available to assist fledgling entrepreneurs and established companies.

Sometimes the most successful decision is not to start a business.

“There are a lot of ideas that should be abandoned early,” Peterson said. “Many times people just aren’t aware of everything that is involved with creating a new product.”

Peterson said the center views a decision to halt the process just as successful as one that goes forward.

“Otherwise, a lot of time, money and effort are wasted on something that isn’t going to work,” he explained. “Avoiding those losses is a good business decision.”



Fresh apple slices give growers a bigger piece of the pie

by Sara Long

McDonald's endorsement of fresh apples and consumer acceptance of Apple Dippers® have opened the door to a profitable new opportunity for Michigan's apple growers and processors, and it has already had a major impact on the state's apple industry.

A western Michigan processor is one of three major suppliers of fresh apple slices to McDonald's in the United States. The company, which opened a new sliced apple processing facility and added more than 100 new full-time jobs to help meet demand for the product, may require up to two-thirds of the state's fresh apple crop to fulfill its McDonald's contract.

In 2002, MSU conducted a feasibility study that indicated promising market potential for a fresh sliced apple product and led to expanded involvement from other organizations. MSU researchers and specialists representing multiple disciplines participated in all phases of the subsequent research project, from the time the apples grew on the tree until they were packaged, including processing, sensory evaluation and consumer sampling. Thanks to researcher and processor efforts, Michigan's \$100 million apple industry has been able to get in at the ground level and become a major player in the fresh cut apple industry.

welcome to Michigan

TOURISTS VISITING MICHIGAN WELCOME CENTERS ARE FINDING NEW WAYS TO PLAN THEIR TRIPS. MSU WORKS WITH TOURISM PROFESSIONALS TO HELP THEM DO IT USING NEW TECHNOLOGIES.

by Beth Stuever

When Dave Morris wanted to know how well Michigan's 13 welcome centers would fare in the age of the Internet, he turned to Michigan State University's tourism expertise. There, he met Christine Vogt, an associate professor in Community, Agriculture, Recreation and Resource Studies with a background in tourism.

"They helped us conduct an ambitious survey at all 13 welcome centers so we could profile the types of people who used them and determine why they stopped, what impact the centers had and the economic impact of their visit on the state," Morris says.

"We found that welcome centers are more than just a nice service to offer visitors," Morris says. "They genuinely contribute to the state's economy. A number of communities have learned how to take advantage of welcome centers, and that adds to their bottom line."

In fact, the research found that additional travel expenditures generated by visitors to Michigan's welcome centers is

more than \$32 million annually. Annette Rummel, director of the Saginaw County Convention and Visitors Bureau, says that statistic alone made her job easier.

"We've been using that information with our board members to show them that welcome centers are worth the investment," she says.

That wasn't the only useful information that came out of the study. Tourism professionals wondered if welcome centers would cease being useful as more and more travelers relied on the Internet for trip information.

Vogt confirms that travel continues to be one of the top uses of the Internet.

"It's a perfect match—connecting consumers to the travel industry without the middleman," she explains. "The days of the travel agent are diminishing. Consumer can go directly to providers and pick their own flights, hotels, etc."

But Vogt's research shows that the Internet not only doesn't eliminate the use of welcome centers, but enhances it.

A visitor contemplates the numerous brochures at the Dundee Welcome Center. "There is a huge



“Welcome centers needed to adjust to the changing market,” she says. “Through a series of focus groups we found that people would benefit from high-speed Internet access at welcome centers. It streamlines the information they receive and serves as a gateway that links to communities they plan to visit.”

Though the research showed the importance of the Internet and WiFi capabilities, Rummel says it also confirmed that brochures and paper guides are not a thing of the past.

“There is a huge segment of the market that will forever rely on printed information,” she says, adding that it’s often older people who don’t want to take the time to learn new technologies. “They like the feel of information in their hand and are more secure if they can carry it with them. That may eventually change,

But for now, we know we need to continue to present information in that format, too.”

segment of the market that will forever rely on printed information,” Annette Rummel says.



If you bike, hike or walk in Michigan, chances are you’ve come across rail trails. These former railroad beds have had their tracks removed and replaced with crushed gravel or asphalt to create pleasant recreational paths where people can enjoy nature’s sights and sounds.

Chuck Nelson, associate professor in the Department of Community, Agriculture, Recreation and Resource Studies, calls rail trails “the front porch of their community. It’s where communities come together.”

That sense of community comes at a price. Removing railroad ties and laying down a user-friendly surface costs \$75,000 to \$150,000 per mile. Though that’s only half the cost of building a trail from scratch, it’s still a significant investment.

In 2000, Nelson teamed up with fellow associate professor Christine Vogt to find out if the investment was worth it. They conducted an in-depth study to help define the role recreational trails play in the local economy. They found a significant value in rail trails. And their impact is not limited to clear, sunny days.

“The portion of the Pere Marquette Rail Trail that goes through Midland County was used 177,000 times in non-

snow months,” Vogt explains. “And 25 percent of those uses were people from outside the local area. People who use rail trails stay in hotels or campgrounds, eat in local restaurants and shop at local stores. A lot of money flows through the state’s economy because of them.”

Michael Eberlein, non-motorized transportation coordinator for the Michigan Department of Transportation, uses that information to guide communities that are considering rail trail projects.

“They come to us for information about rail trail development,” he says. “This study provided us with a model we could show them.”

Eberlein says trails are becoming even more valuable for traffic-weary commuters.

“People are tired of the congestion,” he says. “Trails offer an alternative for short trips, thereby conserving energy and reducing pollution and traffic congestion.”

putting trails to work



Detroit River destinations

HUMAN AND NATURAL DEVELOPMENT WORK HAND-IN-HAND TO BRING THE DETROIT RIVER BACK TO LIFE.

by Laura Probyn

Two new lighthouses grace the banks of the Detroit River. One has a working beacon that guides freighters and anglers. The other sits in the Tri-Centennial State Park, Michigan's first-ever urban state park. Both signal a renewal that brings fish, economic development and hope back to Detroit.

The Detroit River, once a centerpiece of human activity, a critical transportation corridor for native peoples and a gathering place for the settlers that followed them, had long been plagued with abandoned industrial sites and urban decay.

"There's a great heritage here and we lost that connection," says Mark Breederland, MSU Extension Sea Grant educator. "Boblo ferries, those huge, coal-powered boats that held 2,000 people and brought them to the riverfront for recreation and dances, stopped operating in 1982. After that, there were fewer reasons to come to the waterfront."

An unsuccessful attempt to develop urban greenways and waterfront parks in

the late 1990s was followed by a successful bid to join President Clinton's American Heritage River (AHR) program. The designation included five years of federal funding for a "river navigator."

John Hartig was chosen to fill this role.

"'Navigator' was an apt name," says Barry Murray, a former private sector cooperator and now the Michigan Sea

Grant educator supporting the AHR. "He had to navigate federal agencies and work with communities. These programs can be mysterious, and communities don't know what they have to do. Sometimes they can be fearful of regulatory agencies such as the EPA and the Corps of Engineers. But with John's help, things moved in the right directions."

Hartig worked with a committee to help communities and businesses set priorities for riverside development in broad categories and then focused on specific projects within those categories that were not only achievable and manageable but would attract funders. They worked to use federal, state, local, corporate and grant support to move projects forward.

Though the AHR designation provided funding for Hartig's position, there was no other designated funding for projects or operations. The Metropolitan Affairs Coalition (MAC), a regional civic organization of business, labor and government that addresses issues affecting the Detroit metropolitan area, agreed to adopt what came to be called the Greater Detroit American Heritage River Initiative and has led and managed it since 1998.

"Quality of life is economic development."

Barry Murray has been involved in efforts to enhance the Detroit River shoreline and downriver communities since the late 1990s, first as a part of the private sector, and now as the Michigan Sea Grant educator for southeastern Michigan.



MAC worked with the U.S. Department of Transportation in funding Hartig's position and providing an office and related support and establishing a management structure to guide the initiative. It continues to work to this day with Michigan Sea Grant, the U.S. Fish and Wildlife Service, local governments, community groups and others to identify, plan and undertake river enhancement projects.

"A big part of the argument of why a project like this makes sense is that quality of life is economic development," says David Sanders, MAC vice president. "Young, information-age, mobile professionals often determine where they want to live before they determine where they want to work. Metro Detroit needs to become more competitive and create an image that's much greener with open space and bluer with access to the water."

Other efforts have been aimed at preserving native fish and wildlife, which had struggled amidst rising industrial pollution. The Detroit River fishery has improved so much that the river now plays host to professional walleye fishing tournaments. Michigan Sea Grant and partners constructed a spawning reef for sturgeon off Belle Isle. President Bush helped move the effort forward by designating the area an urban wildlife refuge in 2001.

"Toxic hotspots have been noted as officially cleaned up by the EPA, and the Detroit Water and Sewage Department has done cleanups," Brederland says. "The resource is there, the aesthetics are there. If you go to Fighting Island, you see smokestacks in the distance, but it feels like northern Michigan." 🌈

MSU and U-M partner to improve Traverse City's downtown

For years, Grandview Parkway has been a physical barrier between downtown Traverse City and Grand Traverse Bay. But the recent decommissioning and demolition of the Traverse City Light & Power Board's bayside power plant has created new opportunities for the waterfront area of the city's West Bay.

Michigan State University and the University of Michigan have teamed up with the Traverse City community to rebuild the connection between the city and its waterfront. MSU's Small Town/Community Design Initiative and the landscape architecture program within the MSU School of Planning, Design and Construction, together with the U-M Center for Economic Diversification and the landscape architecture program in the U-M School of Natural Resources and Environment are bringing in students and faculty members to help with the effort over the next year.

"Michigan State is being asked to look at the city's downtown and its relation to the waterfront," said Warren Rauhe, MSU associate professor of landscape architecture and director of the initiative. "It's a wonderful interfacing between our two institutions."

Other partners involved with the project include the Traverse City Downtown Development Authority, the Traverse City Convention and Visitors Bureau, the city Planning Department, the U-M Office of Government Relations and the Great Lakes Water Studies Institute at Northwestern Michigan College.

In June, nearly 200 people provided public input at a session aimed at examining strengths and weaknesses and eliciting a vision for the city. A second series of meetings in September brought residents together for small- and large-group discussions and a four-hour communitywide design charrette, or collaborative planning process, in which students and community members worked together, drawing on the fly, to create and support a feasible plan for the future.

At the same time, MSU senior design studio students and U-M landscape architecture students engaged in fieldwork in the city. Graduate students in the U-M landscape architecture program began looking at downtown Traverse City and its relationship to the waterfront, while the U-M Center for Economic Diversification, under the direction of

Lawrence Molnar, undertook a business analysis survey with specific focus groups of business people, government representatives and tourists.

Designs for the waterfront will be presented via an interactive televised program produced by WKAR-TV to be simulcast between the East Lansing campus and Traverse City.

Ultimately, these collaborative efforts will produce Design Guidelines and Standards for Reconnecting Traverse City to its Bay, a manual of design guidelines and standards to bridge the gap between downtown and the bay that will provide valuable tools and techniques that can be used to develop and design the city in a culturally, ecologically and economically sustainable manner.

Revitalization of downtowns, such as Olde Town in Lansing, has drawn people and investment dollars to areas that had experienced decades of decline.



water for life

HEALTH IS WEALTH, BUT BEING SURROUNDED BY THE WORLD'S LARGEST FRESHWATER SUPPLY ISN'T ENOUGH. PROTECTING IT IS THE KEY TO SURVIVAL.

by Jamie DePolo

Joan Rose understands the importance of water to Michigan. One of the country's top water scientists, Rose holds the Homer Nowlin Endowed Chair in Water Research and is affiliated with the departments of Fisheries and Wildlife, Crop and Soil Sciences, and Microbiology and Molecular Genetics and the Michigan Agricultural Experiment Station.

"Water quality has always been important to the citizens of Michigan," she said. "What we do here in Michigan represents the struggles with water globally. Clean water is important to Michigan because both groundwater and surface waters serve the state's urban, agricultural and rural populations. Water

quality degradation is, for the most part, human-induced. Wastewater, biosolids, storm water, combined sewer overflows, industrial discharges, septic tanks, ballast waters and agricultural practices may contribute pathogens, pharmaceuticals, pesticides and nutrients to the water environment. This could potentially affect public health, animal health, agricultural health and ecosystem health."

Rose is leading MSU's work in a newly formed center that will study the Great Lakes, looking at how humans

"We are in a unique position to address important issues related to human health."

affect the lakes and how, in turn, the lakes affect human health.

The Center of Excellence for the Great Lakes and Human Health is funded by a grant from the National Oceanic and Atmospheric Administration (NOAA) and will be located at the Ann Arbor-based Great Lakes Environmental Research Laboratory.

Rose said MSU is an integral part of the center.

"MSU has a very strong history in microbiology," she said. "By combining

the aspects of waterborne diseases, which are caused by microorganisms, and expertise in microbiology, as well as an understanding of the Great Lakes system, we can start to address some of these areas that have been neglected."

"I believe we are in a unique position to address important issues related to human health, as we at MSU have strengths in the areas of pathogens, microbial ecology, and hydrology and modeling," said Phanikumar Mantha, professor of civil and environmental engineering and geological sciences and one of the co-directors of MSU's work on the project.

The center will focus on human health effects in the Great Lakes in three main areas: drinking water, beaches and harmful algal blooms.

"Defining and forecasting these relationships will be the primary research focus of the center," Rose said. "Research will concentrate on providing forecasts of water quality that can be used directly to reduce threats to human health."

The health and well-being of the Great Lakes is as much an economic issue as it is a health issue, Mantha said.

"I think health is wealth," he said. "There has been a lot of debate recently on the connection between human health and the economy. I think an investment in health and the environment is an investment in our future prosperity."

The Great Lakes, Rose said, contain the largest supply of fresh water in the world, providing 56 billion gallons of water daily to more than 40 million people. In addition, more than 500 beaches

MSU's water research agenda includes balancing the state's water budget so that the water sectors—including the agricultural, industrial, tourism, community and ecosystem sectors—are integrated and have access to the quality and quantity of water they need for continued economic growth.





As the holder of the Homer Nowlin Chair in Water Research, CANR scientist Joan Rose has a vision for water research in Michigan that focuses on the importance of water for the health of humans, animals and the environment.

along its shores are used for swimming and other recreational purposes.

“With the recent incidences of contamination on our beaches, sewage spills and outbreaks of illness, the work we do through this center will have a real impact on our health and, particularly, our children’s health and how well we can protect our water quality,” Rose said.

Among other things, Rose is working to develop an accurate and reliable

method to determine if fecal contamination is from humans or animals. She said this is necessary because human sources carry a greater risk of spreading disease.

Other items on Rose’s water research agenda include balancing the state’s water budget so that the water sectors—including the agricultural, industrial, tourism, community and ecosystem sectors—are integrated and have access to the quality and quantity of water they need for continued economic growth. She also wants to enhance community infrastructure and environments.

“There is a great need to address wastewater, combined sewer overflow storm water and other non-point source pollution,” she said. 🌈

up on the roof

by Jamie DePolo

In 2004, Brad Rowe, associate professor of horticulture, and Clayton Rugh, assistant professor of crop and soil sciences, helped MSU go greener—they oversaw the installation of a vegetative green roof on a portion of the Plant and Soil Sciences Building. It’s much like the green roof that Rowe and Rugh helped design for the Ford Motor Company’s River Rouge Complex in 2000.

Ford’s green roof—combined with other vegetation features, including landscape berms, ponds, plant-filled ditches and porous parking lots at the plant—delays the storm water runoff flowing into the River Rouge by as much as three days, and it saved the auto company the expense of putting in a multimillion-dollar storm water treatment system.

“Ford is not in the business of horticulture, so when the architect suggested putting a green roof on the facility, we came to Michigan State University to see if it were possible,” said Don Russell, Ford sustainable design project manager. “With MSU’s research facilities and the expertise of Drs. Rowe and Rugh, we were able to see what the roof would look like with the varieties of sedum.”

On a specially developed base, the MSU scientists laid 200-pound rolls of sedum that are growing into a living, flowering carpet. At 10.6 acres, the Ford green roof is one of the country’s largest, and it is being closely monitored by the researchers.

Such a roof requires less maintenance than shingles or asphalt sealant and it doesn’t need to be mowed or weeded.

The green portion of the MSU roof is about 3,500 square feet; the rest was left covered with conventional materials for research purposes.

The cutting-edge technology offers urban areas an attractive way to:

- Reduce airborne pollution.
- Reduce storm water runoff, a major problem in dense urban areas, by more than 60 percent.
- Moderate temperatures for both the building that sports the roof and those around it, reducing the so-called urban heat island effect.
- Reduce noise.
- Increase roof durability and longevity.

The MSU green roof—on the southern two-story section of the building—is an effective on-campus lab, visible from the main building.

The living roof system is composed of a 2-inch layered base that drains water, holds

roots and nourishes the sedum without conventional soil. The system doesn’t wash away or create dust and is comparatively lightweight.

The plants do the rest. Rowe said the mixed varieties of sedum endure extreme heat and cold and can survive more than 88 days without watering. Sedum’s hardiness and ability to grow in the minimalist root system makes it triumph over weeds.

The green roof concept is still new in the United States but Rowe’s and Rugh’s work is helping the trend gain popularity. Existing American flat roofs must be modified to convert to green, and green roofs are initially more expensive, but over time, energy savings, storm water runoff reduction and other benefits make them cost effective.

In addition to the green roof, other vegetative features (landscape berms, ponds and plant-filled ditches) and porous parking lots at the plant delay the storm water runoff flowing in the River Rouge by as much as three days and saved the auto company the expense of putting in a multimillion-dollar storm water treatment system.



"Throughout most of my academic career, I have been what most would consider a 'non-traditional student'. Because of heavy work and family obligations, non-traditional students are at a marked disadvantage when compared to their traditional counterparts, whose schedules and obligations are largely dedicated to academic endeavors. The flexibility in scheduling allowed by online courses tends to level the playing field, thus eliminating the advantage that traditional students would normally enjoy. The level of success depends entirely upon the amount of time and effort the student is willing to apply to his studies."

Derrick Payne, first graduate of the MSU ProMS in Food Safety

invasion of the cyberstudents

by Francie Todd

Earning a degree requires an enormous personal commitment. It is an even greater challenge for non-traditional students, many of whom juggle family and career responsibilities in addition to their studies. At Michigan State University, the needs of these adult students are increasingly being met through online degree programs. Internet-based programs are highly accessible and flexible, offering increased access to both students and faculty members from around the world.

While many students consider the Michigan State campus as a drawing card of the university, there are those who attend MSU without ever setting foot in East Lansing. An online master's degree program in Packaging, for example, can be completed in as little as three years, all without entering a physical classroom. The online master of science in packag-

ing, introduced by the College of Agriculture and Natural Resources in 2001, provides a broad education in packaging with an emphasis on strengthening participants' skills in analyzing social, scientific, environmental and business problems associated with packaging. The degree requirements are the same as those for the on-campus program.

"The School of Packaging at MSU is the world's premier program," said Ron Iwaszkiewicz, coordinator of distance education programs for the School of Packaging. "We believe that to maintain that status and recruit the best, this is the next logical step to take."

Iwaszkiewicz expects the program to be most attractive to professionals who want more education but don't want to leave their jobs, as well as to potential students from overseas.

A master's program in food safety instituted by the National Food Safety and Toxicology Center (NFSTC) in fall 2002 includes a weeklong introductory course on campus, complete with tours of the NFSTC facilities and a faculty panel discussion. The remaining course of study for the MSU professional master of science (ProMS) in food safety is complete online.

The NFSTC, operating under the umbrella of the MSU College of Veterinary Medicine, can call upon a faculty that represents eight colleges and 18 departments within MSU, as well as internationally recognized guest contributors made possible through online programming.

"Distance learning opens the world's portals to food safety education, giving us a unique opportunity to train and educate individuals who are responsible for assuring a globally safe food supply," said Dr. Ed Mather, deputy director of the NFSTC and director of the ProMS program.

The ProMS program offers students from around the world the flexibility to pursue careers that bring together research, product development, regulatory affairs, production, marketing, finance and management—on their own time schedule and without disruption to their employment.

In addition to degree-granting programs, the CANR offers a variety of certificate programs and individual classes via the Internet. These programs offer continuing education to people wishing to advance in their professions or considering new fields, and make it possible to fit college classes into an already crowded schedule.

"Distance learning opens the world's portals to food safety education, giving us a unique opportunity to train and educate individuals who are responsible for assuring a globally safe food supply."



The International Food Law Internet Certificate Program, offered by the Institute for Food Laws and Regulations and the CANR, was the 2003 winner of the Excellence Award in College and University Distance Education from the American Distance Education Consortium. This distance education program includes a series of region-specific food law courses taught entirely over the Internet by an international network of food science academic and legal professionals who understand the legal complexities of food laws and how these laws affect the flow of food and agricultural products across national boundaries.

A virtual watershed management program is offered through the Institute for Water Research and the CANR Department of Community, Agriculture, Recreation and Resource Studies (CARRS). The class series can be taken as for-credit courses by MSU students at both the undergraduate and graduate levels, and by non-MSU Lifelong Education students or as non-credit certificate classes.

The MSU Extension Citizen Planner Program has developed an online pilot program designed to address the education needs of Michigan citizens appointed to serve on local land use planning bodies. The Citizen Planner Program, in partnership with the Michigan Society of Planning and with funding support from People and the Land, offers a series of five online learning units. Courses can be taken individually or in conjunction with the classroom-based Citizen Planner Program, for which participants can obtain a certificate of

competency. A major advantage of the Internet environment is that the program can respond to the ever-changing nature of land use issues and laws. The online program provides the additional advantage of a connection to a community of online learners from across the state that share a desire to become more informed, effective and responsible community leaders.

The Horticulture Gardening Institute, a national organization founded by MSU Global Ventures, the MSU Department of Horticulture and the MSU Extension Master Gardener Program, offers Web-based courses for budding gardeners. The courses, featuring national experts, offer gardeners a venue for exchanging ideas and learning new skills.

Most students on campus are exposed to online learning to some degree. Various traditional courses include sections that are offered entirely online, and many classes include a blend of in-person and technology-assisted instruction techniques that offer learners greater flexibility in scheduling and the ability to review lectures, demonstrations and other class materials.

MSU currently offers more than 100 courses online ranging from non-credit continuing education courses to master's degree programs. Online programs combine technological innovation with quality course content to provide a flexible, accessible learning environment. For more information, go online to <http://online-continued.msu.edu>. 

New school of planning, design and construction offers a holistic view of the built environment

As populations throughout the world soar, there are growing expectations for housing, retail space and manufacturing sites. Increasingly, urban expansion conflicts with the shrinking rural landscape. Redevelopment and redeployment of existing resources to new uses will be increasingly important. Demand for built structures that interface effectively with their surrounding environments is growing.

The Michigan State University School of Planning, Design and Construction (SPDC), established in July 2004, offers an integrated approach to planning and constructing the built assets of communities. The SPDC encompasses units from the College of Agriculture and Natural Resources (Construction Management), the College of Social Science (Landscape Architecture, and Urban and Regional Planning) and the College of Human Ecology (Facilities Management and Interior Design). The SPDC is administered jointly by the College of Agriculture and Natural Resources and the College of Social Science, under the direction of Bob von Bernuth, former director of the Construction Management Program.

Bringing these disciplines together into the School of Planning, Design and Construction will position MSU to become the nation's leading institution dealing with issues of land use, community development and the built environment. With faculty members involved in virtually every aspect of housing, commercial building, land-

scape, interior design, land use, project management, growth management, the technological aspects of community development, infrastructure and public policy, the SPDC will serve as the foremost resource for systemwide approaches to designing livable communities.

The School of Planning, Design and Construction is seeking private funding for a campus complex to bring its disciplines together into a central location. The old Shaw Lane Power Plant, adjacent to Spartan Stadium, is being considered as the centerpiece to a future home for the SPDC.



Windmills like this could help Michigan farmers cut their fuel costs and diversify their income.



farmers have always been at the mercy of the weather. Now, the wind currents that bring rain and snow may also bring Michigan producers money.

Michigan State University Extension and the Michigan Energy Office are exploring the potential of wind energy development in the state—specifically, on Michigan farms. Wind energy can help diversify the economy of rural areas and provide new sources of income.

“Wind energy is an alternative way for farmers to increase their revenue,” says Lynn Hamilton, project coordinator. “It’s like a third crop.”

The project, titled Integrating Wind Energy Resource Information into the Michigan State University Extension System, is funded by the

Michigan Energy Office and the U.S. Department of Energy. It will include wind energy workshops, information for farmers about the legal aspects of wind energy and help for farmers in determining whether wind energy might be viable for their operations.

Farmers interested in wind energy production have three options. They can lease their land to developers, who put up the capital and operate the wind project while farmers receive payments for use of the property. Farmers may also choose to develop and own the wind turbines themselves, either via cooperative or sole ownership. A third possibility is to install a small-scale wind turbine on the farm to reduce the energy costs of their operation.

“If you can manage the risk initially, in the long term profitability is good,”

“After the debt is paid, farmers can bring in six figures annually, just from the wind blowing.”

alternative energy

FARMERS LOOK TO THE SKIES FOR A NEW CROP THAT COULD INCREASE REVENUES AND DIVERSIFY INCOME.

by Michelle McMullen

Hamilton says. "After about 10 to 15 years, after the debt is paid, farmers can bring in six figures annually, just from the wind blowing."

MSU Extension farm management educators will work with farmers interested in wind energy to help them pursue grant opportunities and determine the best ownership structure for their operations.

"The ownership structure determines the amount of revenue that stays in the local community," says Stephen Harsh, MSU agricultural economics professor.

According to the American Wind Association, Michigan is the 14th windiest state in the United States, and the new wind maps show viable wind resources in western Michigan and the Thumb.

"We are really focusing our efforts to help farmers take the best advantage of this energy source," Hamilton says. 🇺🇸

Ethanol plants give farmers and consumers fuel alternative

by Beth Stuever and Michelle McMullen

High gas prices, an unwanted gift left in the wake of Hurricanes Katrina and Rita are enough to stop many Americans in their tracks.

According to Jody Pollok, executive director of the Corn Marketing Program of Michigan, the spike in fuel costs is a harsh gut check.

"It's causing people to step back and realize how reliant we are on foreign oil and coastal refineries," she says. "More and more people are seeing the advantages of home-grown fuels such as ethanol."



That goes double for Michigan corn producers who continue to struggle with stagnant commodity prices. Many are considering marketing their crops through value-added opportunities, including a new southeastern Michigan ethanol plant that will provide a marketing outlet for producers across the state and beyond.



"Corn is the backbone of our industry," says Mike Score, Michigan State University Extension (MSUE) agriculture and natural resources educator. "We have to move past commodity production to increase profit margins, and we need to produce products that are directed to the consumer."

Currently Michigan is home to one ethanol plant, Michigan Ethanol in Caro. Ground was broken for three more plants this fall in anticipation of beginning production in late 2006 or early 2007.

The hope is that Great Lakes Ethanol in Adrian will help local corn producers up their paltry profits, which can dip as low as 10 cents per bushel when corn is sold through regular commodity channels. A feasibility study determined that an ethanol plant in southeastern Michigan would offer a 20 percent return for

"More and more people are seeing the advantages of home-grown fuels such as ethanol."

investors and that the region has sufficient resources and the physical infrastructure to support a plant.

"Currently 50 percent of the corn produced in Michigan is shipped out of state," said Jeff Ehlert, president of Great Lakes Ethanol. "Ethanol is a value-added product that can increase the corn price by 10 cents per bushel."

Great Lakes Ethanol will create 40 new full-time jobs and will indirectly create 25 new jobs with the opening of a carbon dioxide plant that will make use of byproducts from the corn processing.



my land, your land, our land

by Jamie DePolo

In 1994, urban and built-up lands covered approximately 5.5 percent of the state, according to the Natural Resources Conservation Service. In 2004, that number crept up to 9 percent. The 2001 Michigan Land Resource Project study projected that if current land use patterns continue, by 2040—a generation from now—Michigan's built or developed land would account for 17 percent of the state. The same study projected that agricultural land would drop to 9 million acres, a 17 percent decrease. At this rate, it wouldn't take Michigan long to catch up to New Jersey, the country's most built state, which has developed 26 percent of its land.

"Everything we care about—quality of life, income levels, obesity, school funding, the environment, zoning—are all related to land use," said Soji Adelaja, John A. Hannah Distinguished professor in land use policy and head of MSU's Land Policy Program.

A nationally renowned scholar, Adelaja focuses his research on land use, agricultural policy in urban interface areas, and economic development of and emerging issues in the food industry.

The MSU Land Policy Program was created in 2004. Its mission is to provide effective, science-based solutions and educational/ outreach programs to support various state, national and international stakeholders in land use.

"States are beginning to realize how important land use planning is," Adelaja explained. "In New Jersey, we saw businesses fleeing the state because the cost of doing business was increasing. There was no master plan ... Michigan is the next state to take land use seriously."

In 2003, Gov. Jennifer Granholm created the bipartisan Michigan Land Use Leadership Council to study and identify trends, causes and consequences of urban sprawl. Their final report outlined more than 150 recommendations to deal with the long-term consequences of unplanned, unmanaged growth for both the environment and the economy of Michigan.

After the report was released, Adelaja worked with the steering committee of the Kellogg Land Policy Grant to organ-

ize faculty and stakeholder meetings to develop program areas and specific projects in high priority areas.

In February 2004, he presented the Land Policy Program's theme areas at a land use summit attended by researchers from around the state, as well as local and state government officials. He also met with Granholm's senior staff members to discuss how MSU research could support the issues the governor felt the state would be moving on first.

"MSU will be able to deepen its research and expand its outreach ..."

"It is important to demonstrate that academic research can be timely, relevant, responsive and yet rigorous, and that we take our role in state policy development very seriously," Adelaja said. "I view the Land Policy Program as the bridge between state government and academia."

Adelaja is working on projects related to land use policy in the state.

"Agricultural sustainability requires a vision for agriculture in Michigan," he said. "We need to know where the good soils and best climates are, where the markets are, water availability—all the infrastructure that agriculture requires. Working with MAES faculty members such as Mike Hamm, C.S. Mott Chair for Sustainable Agriculture; Jim Bingen, agricultural development scientist; and Stu Gage, entomology researcher, we are developing an algorithm to rank the acreage in the state for its suitability for farming based on these variables. Then we'll have a better idea of where to preserve farmland that will be sustainable." 🌈

Kellogg Foundation supports land use initiatives with \$5.9 million grant

A three-year \$5.9 million grant from the W. K. Kellogg Foundation will support land use policy research, education and innovation in the MSU Land Policy Program in partnership with Public Sector Consultants, a Lansing-based public policy research firm.

The grant builds upon People and Land (PAL), a statewide partnership that has played a major role in initiating change in Michigan land use policy. The PAL approach focuses on educating citizens and policy-makers about land use issues.

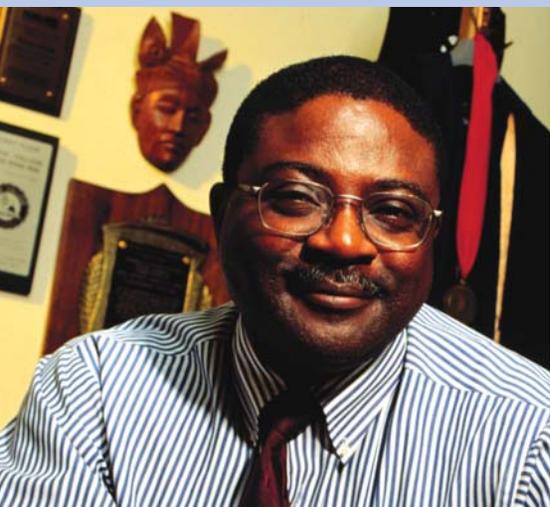
Bill Rustem, president of Public Sector, will serve as co-director of the Phase III PAL work together with Soji Adelaja, the principal partner in implementing the grant.

"PAL III funding will allow us to establish a sustainable land use change infrastructure that will compete nationally in attracting resources to implement effective

land use solutions in Michigan," Adelaja said. "MSU will be able to deepen its research and expand its outreach through the PAL network of communities and organizations, and through the direct engagement of Extension at the local level."



Soji Adelaja is head of MSU's Land Policy program.



double the fun

MSU AND PSU CELEBRATE 150TH AT AUTUMNFEST

For nearly 30 years, AutumnFest has been an annual rite of autumn in the MSU College of Agriculture and Natural Resources. More than 1,000 alumni, friends, family members and supporters of Michigan's agriculture and natural resource industries gather each year for the "largest tailgate party on campus." AutumnFest features food, entertainment, a lively auction and raffles, and visits by MSU cheerleaders, Sparty and the Spartan Marching Band.

The event, hosted by the CANR Alumni Association, is a celebration of communities, agriculture and natural resources at MSU—and everything green and white. The sesquicentennial edition of AutumnFest, however, will be a bit more colorful with the addition of Penn State blue. To celebrate this year's 150th anniversary of the two pioneering Big Ten land-grant universities, AutumnFest is opening its doors to Penn State fans in a big way.

"AutumnFest has always been a great event for MSU and the College of Agriculture and Natural Resources," said Kathryn Reed, CANR assistant director for alumni relations and special events. "This year, since we're playing Penn State

and it's the sesquicentennial for both universities, we decided to invite Penn State guests to the party. They are promoting AutumnFest to their alumni and will be bringing several busloads of fans, as well as their pep band, cheerleaders and the Nittany Lion."

The Penn State Alumni Association will also donate AutumnFest

auction and raffle items. AutumnFest is a major fundraiser for the ANR Alumni Association scholarship fund, bringing in thousands of dollars for student scholarships through the auction and raffles each year.

"Though the proceeds from Penn State auction items will benefit its own scholarship fund, the raffle will be huge this year and the auction will be the most exciting one yet," Reed said.

Auction and raffle items often included vacations; chartered fishing and sailboat cruises; a hog roast tailgate party; gourmet dinners; autographed MSU and Detroit



One-of-a-kind sesquicentennial quilts for both MSU and PSU will be among auction items at AutumnFest 2005.



MSU president Lou Anna Kimsey Simon visits with Autumnfest guests.



Tigers sports equipment; and a number of handcrafted items, including woodworking, quilting and stained glass art.

AutumnFest also features information and free samples of Michigan-grown products at the booths of Michigan's agricultural and natural resources industries and organizations. Student groups also have booths with information and items for sale to fund their group activities.

AutumnFest brunch tickets for 2005 cost \$20 per person when purchased in advance or \$25 at the door for adults, \$10 for children 6 to 12 years of age and free for children 5 and under.

For more information, contact Kathryn Reed at (517) 355-0284. 🇺🇸

Innovative project epitomizes the 21st century land-grant at work

Michigan State University is helping an underdeveloped country usher in a new day with Partnership to Enhance Agriculture in Rwanda through Linkages. This innovative program, also known as Project PEARL, is the purest application of the land-grant tradition of partnership, practical application and research. It's also personal stories of perseverance, vision and triumph.

PEARL is assisting the nation of Rwanda in its efforts to rebuild from the impacts of the war and genocide of 1994. PEARL works with rural communities across Rwanda to generate income through agricultural product development and market linkages.

PEARL reaches out for knowledge from university laboratories to industry experts to the farmers themselves. Then, the principles of extension that 150 years ago brought practical solutions to people across America are applied to rejuvenate Rwanda.

Coffee (shown here) is PEARL's first and most dramatic success story. But its legacy ultimately won't fit in a cup.

You can support this project, and get some great coffee, by logging onto shop.msu.edu.



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