

## PUTTING OHIO IN THE DRIVER'S SEAT

**LAB IDEA YIELDS 60 OHIO JOBS, NEW GREEN INDUSTRY**

A new industry is taking root in Mansfield, Ohio, thanks to more than a little help from the friendly and innovative engineers at the Ohio Agricultural Research and Development Center.



Bio100 Technologies is a new Ohio company that manufactures biopolyol, the foundation for making a variety of soft and hard foam products such as home insulation, automobile seat cushions, packaging materials, and appliance insulation systems. • Developed and patented by OARDC biosystems engineer Yebo Li, this biopolyol is very different from the petroleum-based polyols most polyurethane foams are made from: it combines crude glycerin (an abundant byproduct of biodiesel production with little commercial value) and crop residue. • “This is really a story about Ohio State,” Bio100 Technologies President Jim Cavicchioli said of the startup company. “In 2009, Jeff Schultheis, our company’s vice president and an Ohio State alumnus, took this biodiesel byproduct to the Ohio State Wooster campus and asked, ‘What can we do with it?’ Three years later, we have Ohio State people working with us in the lab. And we will continue to grow with Ohio State.” • Bio100 Technologies has begun commercial-scale production and expects to produce 15 million pounds of biopolyol per year initially, generating \$120 million in sales by 2016. Within five years, the company plans to grow from 12 to up to 60 jobs in Mansfield, whose economy has struggled due to employment losses in manufacturing. • This product has many advantages. It doesn’t take away crops from food production, it’s renewable and biodegradable, and it’s 5–10 percent cheaper than petroleum-based or natural oil-based foams. ■ MAURICIO ESPINOZA

More: <http://go.osu.edu/Ped>

← An inquiry made by Buckeye alumnus Jeff Schultheis spurred a partnership between OARDC and Bio100 Technologies.

# RESEARCHER DESIGNS FIRST-OF-ITS-KIND WASTEWATER TREATMENT SYSTEM

Saves Turkey Processor Millions, Protects Environment

A researcher who has spent her career finding better ways to protect ground and surface water has helped a south-western Ohio turkey processor do just that — and save millions in the process.

Whitewater Processing Co. slaughters 6,000 to 8,000 turkeys on a normal day. The Kopp family has run the business since the 1930s, and with 110 employees, wanted to stay put. But in the 1990s, environmental concerns about the 145,000 gallons of wastewater it produces each day nearly sunk the business.

Today, with a bioreactor treatment system designed by OARDC scientist Karen Mancl, the rough waters have calmed.

In the late 1990s, Whitewater began

working with Mancl after the Ohio Environmental Protection Agency grew concerned about the company's open-lagoon wastewater treatment system, especially with the Whitewater River so close to the facility.

"It's a beautiful river, and we definitely wanted to make sure it's protected," said Mancl, who is also a water quality specialist with OSU Extension and professor of food, agricultural and biological engineering.

The costs have been considerable — about \$1 million to build the wastewater treatment system plus an estimated \$1.8 million to operate and maintain it over the next 20 years. But the Kopp family figures that's at least \$10 million less than the next-best alternative.

"It's working very well. We're very excited about it," said Ryan Kopp, project manager.

In a bioreactor system, wastewater is screened to remove as much of the suspended solids as possible before it flows through beds of sand and gravel. Microbes quickly populate the surface of the sand grains and gravel pieces, and they feast on the organic matter, breaking it down and removing it from the water. Treated water runs clear.

Both Kopp and Mancl believe such a system could work well at other food-related processing facilities.

"But I think we were the perfect place to build the first one," Kopp said.

■ MARTHA FILIPIC

More: [http://go.osu.edu/turkey\\_wastewater](http://go.osu.edu/turkey_wastewater)



*Workers spread fine sand in a bioreactor cell at Whitewater Processing Co. The sand is the heart of the wastewater treatment system: Microbes populate the surface of the sand grains to break down and remove pollutants from the water.*

PHOTO COURTESY OF RYAN KOPP



## OARDC STUDY SHOWS URBAN SELF-RELIANCE POSSIBLE

# ENERGY AND THE CITY

A recent study conducted by the Ohio Agricultural Research and Development Center shows Cleveland and cities like it could get all their energy from local renewable sources.

Doing this, the study's authors say, would create new jobs, keep millions in the cities' economies, and benefit the environment.

Among the sources: Wind energy, solar energy, biofuel from algae, and converting waste into energy.

"Applying the concept of self-reliance, we found that while nearly all of Cleveland's energy is currently imported, this city has the potential to meet a lot of its electricity and fuel demands using local, renewable sources," said Parwinder Grewal, a Distinguished Research Scholar and the director of OARDC's Center for Urban Environment and Economic Development.

He co-authored the study with Parbir Grewal, a former intern in OARDC's Research Internship Program and now a bioprocess development engineer with Genentech Corp.

Their study, "Can cities become self-reliant in energy? A technological scenario analysis for Cleveland, Ohio," was published online in the journal *Cities*.

The researchers developed four scenarios for Cleveland's future energy production based on varying levels of renewable energy development — from only what is currently planned to 100 percent of production from renewables.

The scientists calculated that energy self-reliance would help Cleveland keep from \$28.7 million to \$1.76 billion more within its economy, depending on the scenario. This is money that would have been spent buying energy elsewhere.

Development and production of these new sources of energy would also generate local jobs and stimulate additional economic activity through a multiplier effect, the researchers said.

"Cities can enhance their economic resilience by controlling fluctuations in energy prices," Parwinder Grewal explained. "They can also reduce their ecological footprint by becoming carbon-neutral through recycling waste and using renewable energy sources." ■ MAURICIO ESPINOZA

More: <http://go.osu.edu/Qbd>

← Parwinder Grewal, Distinguished Research Scholar and director of OARDC's Center for Urban Environment and Economic Development.

## Ohio State Researcher to Rewrite Ohio's Phosphorus Index to Improve Water Quality

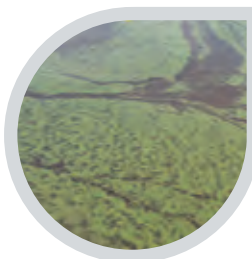


PHOTO COURTESY GLERL, NOAA.GOV

→ Grand Lake St. Marys has lost an estimated \$60–80 million in tourism due to harmful algae blooms. And in 2011, algae blooms covered 990 square miles of Lake

Erie's surface area, the largest in the lake's history. Phosphorus is the pollutant most often implicated in the degradation of Ohio's fresh surface water, with use of phosphorus fertilizer on farmland as a contributing factor. To help mitigate these water quality issues, Elizabeth Dayton, a soil scientist in Ohio State University's School of Environment and Natural Resources, has launched a \$2 million project to evaluate and, as necessary, revise the U.S. Department of Agriculture–Natural Resources Conservation Service Ohio Phosphorus (P) Risk Index to better predict the risk of phosphorus moving off farm fields. Dayton garnered a \$1 million USDA Conservation Innovation Grant and \$1 million in matching donations from Ohio agribusinesses to complete the project. Her goals are to make the index accurate, add more best management practice options, and create a web-based tool so farmers can calculate their P Risk Index scores and evaluate management options to better manage phosphorus. Because the index is used by farmers statewide in developing nutrient management plans for manure and commercial fertilizer application, it's important that the index be as accurate as possible. "With increased degradation of surface water in Ohio, agriculture has increasingly been cast in the role of the villain," Dayton said. "A robust, functioning Ohio P Risk Index will give farmers a better tool to manage field scale phosphorus transport, while sustaining agricultural productivity and protecting surface water quality." The research will focus on, but is not limited to, Grand Lake St. Marys and the Western Lake Erie Basin, two of Ohio's most problematic watersheds. Tom Fontana, director of New Use Development for the Ohio Soybean Council, supports the project. "Water quality is a top concern in Ohio, and farmers want to be part of the solution," he said. "Ohio State's research to validate and update the Phosphorus Risk Index will help us determine what the next best management practices are when it comes to phosphorus use on the farm." ■ TRACY TURNER

# CAMPUS AS A LIVING LAB

## Students Net Sustainability Grants

Three of the four new student sustainability grants given by Ohio State's Office of Student Life have their roots in the College of Food, Agricultural, and Environmental Sciences. And two of the three got their start in a course in the college's School of Environment and Natural Resources.

"The winning teams are responsible for all aspects of their project," said Carlos Lugo, Student Life's sustainability program manager. "So they get real-world experience with everything that is involved in getting the project done and working with multiple constituencies."

The money for the grants comes through Coca-Cola's Student Sustainability Grants program.

"The call for grant proposals deadline happened to coincide with a due date for our students' revised research reports, so we decided to make it an option for them to rewrite their final papers as grant proposals," said Greg Hitzhusen, who teaches the school's "Communicating Environmental and Natural Resources Information" course, ENR 2367.

"I'm excited for the students, and I'm proud of their success," he said. "I think it gives them a lot of confidence as they head toward the job market and other future prospects."

■ KURT KNEBUSCH

More information from  
[hitzhusen.3@osu.edu](mailto:hitzhusen.3@osu.edu)  
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<http://studentlife.osu.edu>

*Greater good: Ohio State students soon will see four new campus sustainability projects. The projects "will benefit and educate the community at large," said an official with the Office of Student Life, which awarded the grants.*





## FOR STUDENTS, 4 NEW ROADS TO REAL-WORLD EXPERIENCE



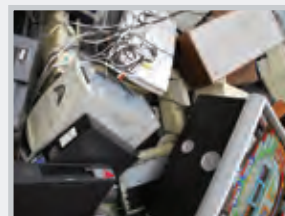
**\$10,672.15 to a student research team** from the school's "Communicating Environmental and Natural Resources Information" course, ENR 2367, in conjunction with the Department of Horticulture and Crop Science, to develop a new May-session course on invasive plant removal. A focus: First-hand practice along the Olentangy River.



**\$6,200 to Horticulture and Crop Science's Student Farmers Coalition** to establish "Farm Smart," a sustainable-agriculture station at the college's Waterman Agricultural and Natural Resources Laboratory. Features: Rainwater catchment, vermicomposting, perennial orchards, and intensive vegetable growing.



**\$3,751 to a second student research team** from ENR 2367, working with Ohio State's Energy Services and Sustainability office, to install a large permanent map near the Ohio Union showing bicycle-friendly routes on campus and to print copies of the map.



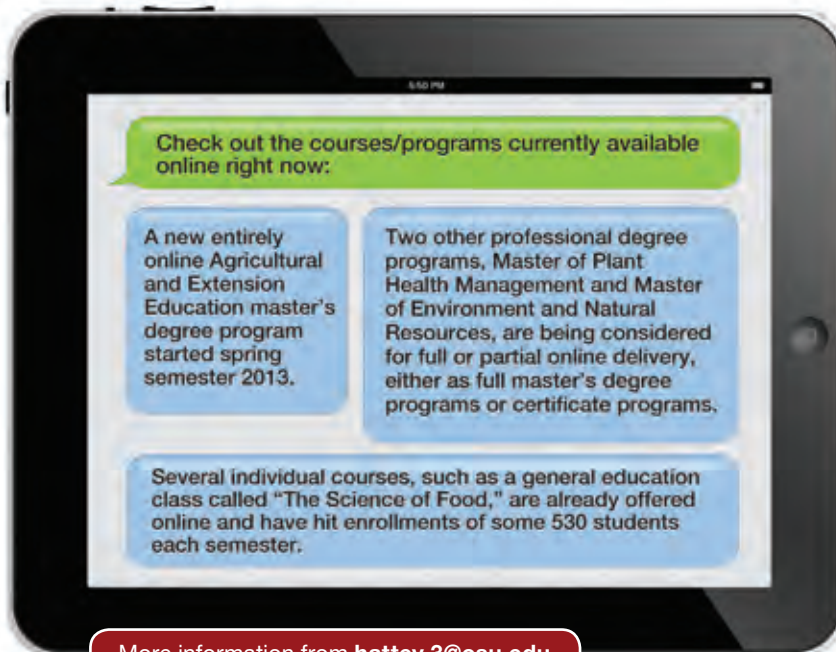
**\$550 to an Undergraduate Student Government group** for a prototype project establishing electronic-waste collection for the campus's residence halls.

Students are getting even better access to the College of Food, Agricultural, and Environmental Sciences thanks to E-learning. » "We're committed to reaching out to offer access to an Ohio State education regardless of where the student is located," said CFAES Assistant Dean Jeff Hattey. "Education access and attainment are closely tied to economic strength." » Hattey said CFAES's E-learning efforts cover a wide and often combined range of methods.

» "One of the terms that's being used now is 'distributed education.' In other words, whether we teach a course as a 'distance course' or face to face, I think those distinctions are going to disappear. In the future, all these methods will just be part of how we teach." » Already, some CFAES professors record lectures with Camtasia software then post them to Carmen, Ohio State's learning management system, either when travel takes them off campus or for the students' convenience. » Others teach "hybrid" courses that combine Carmen-posted lectures with in-person labs and discussion. » And since 1985, many have taught courses using video conferencing, which links faculty and students in Wooster and Columbus. » CFAES's E-learning programs will especially target mid-career workers, Hattey said — people who want to further their training, want the quality and reputation of an Ohio State degree, but can't uproot their job, life, or family to move to Columbus. » Instead, "We'll be providing them access to one of the best-quality educations in the world at a time and place of their choosing." ■ KURT KNEBUSCH

## COLLEGE'S E-LEARNING GOAL:

ACCESS TO A QUALITY OHIO STATE EDUCATION REGARDLESS OF WHERE THE STUDENT IS LOCATED



# Unbeatable Students Create UnBeetable Burger

→ Apparently, it's hard to beat a burger made of beets.

In October 2012, the “UnBeetable Burger” with a soft gourmet pretzel bun won the Student Product Development Competition of AACC International, a professional association specializing in cereal grain science.

The product was created by a team of Food Science and Technology students. The UnBeetable Burger also took third place earlier in the year in the Institute of Food Technologists Student Association and Mars Product Development Competition.

“We wanted to create the first frozen microwavable ready-to-heat vegetarian burger with a bun,” said Liz Green, captain of the 16-member team. “We looked at what is already on the market and wanted to create a product that would fill a market niche.”

The beets also give the burger “a beautiful ruby-red color, plus lots of

antioxidants and vitamins,” she said.

The department encourages students to participate in product development competitions, said Luis Rodriguez-Saona, an associate professor who, with associate professor Monica Giusti, acts as an advisor for such teams.

“These competitions provide a unique problem-based learning experience for students,” he said, helping to familiarize them with industry’s approach to developing new and improved food products.

The UnBeetable Burger in particular was “a very challenging effort,” he said, involving students with backgrounds in food science, food business, and food culinary experiences. “The teamwork led to the development of a delicious vegetarian burger that all judges praised for appeal and taste,” he said. ■ MARTHA FILIPIC



## Semesters Transition a Success as College Prepares for New May Session

As the second full-semester of Ohio State University’s quarter-to-semester conversion winds down and students, faculty, and administrators in the College of

Food, Agricultural, and Environmental Sciences prepare for the first May session, the associate dean in charge of the college’s academic programs says the transition has run smoothly and continues to ensure positive and effective learning opportunities for students.

“In general, the conversion has been very positive,” said Linda Martin. “Our faculty has been invested in making sure the semester curriculum was based on enhancing student learning outcomes in order to both meet the needs of students today as well as position them to be successful in their careers in the future.”

In addition to enhancing the advising process for students, the college also added Friday classes, new programs including a new major, and more study abroad and field study offerings during the upcoming four-week May session, she said.

In fact, the college now has a record number of students who plan to take part in study abroad opportunities during this new May session, Martin said.

The May session allows full-time students from the previous year to get their first three hours of course work at no charge. Above that, additional tuition charges apply. The session also allows students to have the same amount of classroom hours as a regular semester in a shortened period of time.

“The May term has provided students a unique opportunity to study abroad in a shorter time frame and an expanded variety of opportunities for students,” she said. “More students see the session as an opportunity to study abroad without having to give up their summer.” ■ TRACY TURNER



**“We wanted to create the first frozen microwavable ready-to-heat vegetarian burger with a bun. We looked at what is already on the market and wanted to create a product that would fill a market niche.” — LIZ GREEN, CAPTAIN OF THE 16-MEMBER TEAM**



Mike Hogan, left, is one of several OSU Extension educators helping public officials such as Jefferson County township trustee Terry Bell make informed decisions regarding shale energy development in eastern Ohio.

# ENERGIZING OHIO

OSU EXTENSION TAKES LEADERSHIP ROLE IN ENERGY EDUCATION

Ohio is experiencing an energy boom: large solar and wind farms are rising from the ground along with the thousands of jobs and economic prosperity expected from shale energy development.

To help landowners, communities, and public officials navigate the complexities of new energy opportunities and make informed decisions, Ohio State University Extension has established a new signature program called Energize Ohio: Building Ohio's Energy Future.

This initiative builds upon current expertise on energy development topics throughout the Extension system, allocating further resources for partnering with communities, organizations, and other university groups.

The signature program's ultimate goal is to generate and deliver comprehensive educational tools that help Ohioans to capitalize on the energy boom in a sustainable way.

"Continued large-scale renewable energy projects and shale energy activity are the bookends of our signature program," said Eric Romich, an OSU Extension field specialist in energy development and co-leader of the signature program. "But now we are looking to expand into bioenergy crops, waste-to-energy generation, and energy curriculum for youth, among other initiatives."

Myra Moss, an OSU Extension educator for community development, is the other co-leader.

In 2012, OSU Extension taught more than 1,000 Ohioans how to prepare for and attract potential renewable energy developments. In addition, to date more than 16,000 people have attended 180-plus programs on shale energy-related topics. Educational resources are also made available to the public online at <http://energizeohio.osu.edu>. ■ MAURICIO ESPINOZA

The signature program's ultimate goal is to generate and deliver comprehensive educational tools that help Ohioans to capitalize on the energy boom in a sustainable way.

# THE ECO-BOT CHALLENGE

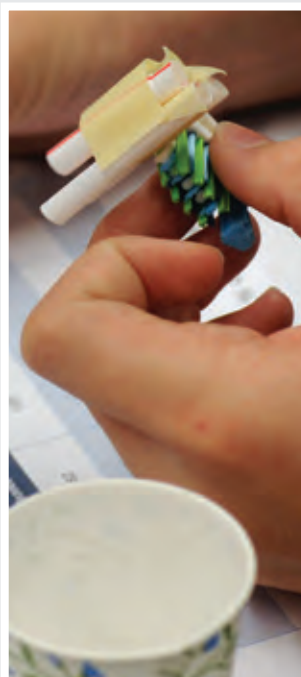
In 4-H's National Science Experiment last October, young scientists gathered at hundreds of locations around the country to figure out how simple robots could be used to clean up a simulated toxic spill.

The experiment was created by Ohio 4-H specialist Bob Horton.

The Eco-Bot Challenge was designed to get the engineering juices flowing among participants, Horton said.

"We're getting them to think like engineers," Horton said. "There is a step-by-step process that engineers use, and we mimicked that process in this particular experiment."

The experiment works like this: Birdseed or rice is spread over a mat to depict a toxic spill on a beach. To prevent harm to human



cleanup workers, authorities want to use Eco-Bots to clean up the spill. Eco-Bots are simple robots that move forward when they are turned on, but they can't be programmed remotely. Participants must devise ways to restrict and redirect the Eco-Bots' movements over the toxic spill to clean up as much of it as possible.

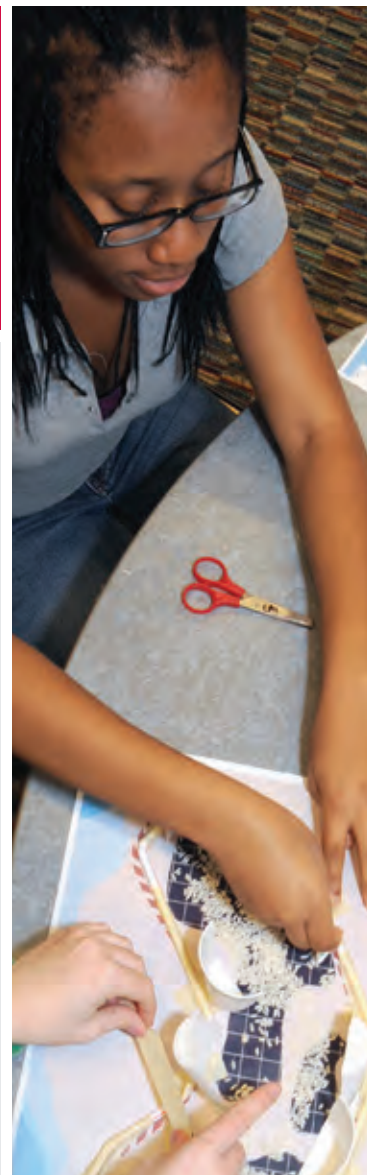
The Eco-Bots used in the experiment are made from the head of a toothbrush, a small vibrating motor, and a watch battery. Kits to use for the experiment are still available from national 4-H at <http://www.4-h.org/4-h-national-youth-science-day/>.

Before National Youth Science Day, Horton and Sally McClaskey, 4-H program coordinator, pilot-tested the experiment

at 4-H camps and other summer programs, and were continually surprised at the inventiveness of participants. McClaskey said the activity is a great illustration of how 4-H works.

"It's that hands-on experimenting," she said. "We're not just telling them how you'd clean up a toxic spill, or tell them about how engineers work. They're going through the process themselves."

Ohio 4-H continues to use the Eco-Bot Challenge with enterprising young scientists, including at the Breakfast of Science Champions with Columbus City Schools in October 2012. It is also the featured activity at the college's 2013 Scarlet and Gray Ag Day. ■ MARTHA FILIPIC



More: <http://go.osu.edu/ecobots>





## Prescription for Change

### Extension teams with College of Pharmacy on community programs

According to the Ohio Department of Health, prescription pain relievers are associated with more overdose deaths than heroin and cocaine combined. And few people realize the extent of the problem.

That's one reason why Ohio State's College of Pharmacy teamed up with Ohio State University Extension educators — to spread the word about the dangers of prescription drug abuse.

"There are a lot of misconceptions about prescription drugs," said Liz Smith, family and consumer sciences educator. "Teens especially don't realize how addictive they can be."

Thanks to the College of Pharmacy's "Generation Rx" initiative (<http://go.osu.edu/generationrx>), family and consumer science educators across the state have offered programs about prescription drug abuse and how to store and dispose of medications safely.

The programs are eye-opening, Smith said.

"If your home is for sale, people posing as potential

buyers will look through your medicine cabinet," she said. "Teens will visit elderly residents' living facilities to steal medications. Most people don't realize just how desperate addicts are, and what they will do to get these medications."

One of the first partnerships with the College of Pharmacy was in Scioto County, which had the state's second-highest fatal prescription drug overdose rate in 2010. The rural county was home to 12 pain clinics where clients would line up to get prescriptions, said Extension Educator Treva Williams. The community fought back, with county and city health departments, school officials, and community members becoming involved. Through Extension, Generation Rx conducted two sets of trainings in late 2010 and 2011.

"I'm not an expert on prescription medication," Williams said. "But because of our connection to the university, we were able to bring the experts here."

Pharmacy and Extension are currently embarking on a new partnership focusing on helping seniors get the best results from medications and how to avoid medication-related problems. The collaboration

is a win-win, said Ruth Emptage, clinical assistant professor in Pharmacy.

"Extension is already on the ground and has built relationships with the local community," Emptage said. "That only helps in getting the message across."

■ MARTHA FILIPIC

## Farmland Value in Ohio Projected to Increase This Year

Cropland values in Ohio increased in 2012 and are expected to continue on an upward trend in 2013, despite the drought that devastated growers last year.

Ohio cropland value rose 13.6 percent last year, with bare cropland averaging \$5,000 an acre, said Barry Ward, production business management leader for OSU Extension. Ward, citing statistics from the Ohio Agriculture Statistics Service, expects the trend to continue this year, with "projected budgets for Ohio's primary crops for 2013 showing the potential for strong profits."

This is true, he said, in spite of the drought of 2012, which devastated growers and producers across the country, particularly in the Midwest including Ohio.

"We're expecting the potential for profitability with corn looking like it will be king again," Ward said. "We'll have farmers with strong balance sheets, which will drive land values as well."

"With those strong balance sheets in spite of the drought, many farmers will continue to be in the land-buying mode."

Because of the moderate to severe drought conditions many growers experienced,

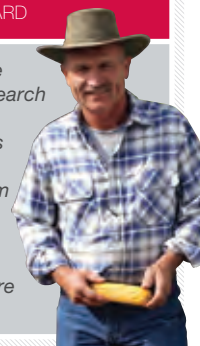
profit margins were highly variable, said Ward.

But crop insurance proceeds will alleviate some of the revenue shortfall and financial stress due to the drought, he said, noting that the last five-year period has resulted in "some of the most profitable years in the last 50 years of crop production."

**"We're expecting the potential for profitability with corn looking like it will be king again. We'll have farmers with strong balance sheets, which will drive land values as well."**

—BARRY WARD

Nate Andre credits research from OSU Extension's Agronomic Crops Team in helping his farm improve its soil moisture and health.




"With many dollars and buyers chasing farmland, it wasn't surprising to see land values increase substantially last year," Ward said. "Crop profitability along with low interest rates have been the primary drivers in the run-up in cropland values."

Depending on land production capabilities, returns to land are projected to be \$204 to \$489 per acre for Ohio corn this year, he said. Returns to land for soybeans are projected to be \$102 to \$295, with returns to land for wheat projected at \$122 to \$288, Ward said.

The projections are based on OSU Extension Ohio Enterprise Budgets, and assume current prices of inputs and present December 2012 and September and November forward contract prices, respectively, he said.

■ TRACY TURNER



**"If your home is for sale, people posing as potential buyers will look through your medicine cabinet. Teens will visit elderly residents' living facilities to steal medications. Most people don't realize just how desperate addicts are, and what they will do to get these medications."**

—LIZ SMITH

# THE BRAINS BEHIND THE BEAUTY

ATI'S LUSH LANDSCAPING IS MORE THAN  
JUST A PRETTY FACE FOR THE CAMPUS



## Donation Helps Greenhouse Club Enter the Local Foods Market

Anyone who buys packaged salad greens at the grocery store knows that fresh, locally grown lettuce at \$2.50 a bag is a bargain not to be missed — especially in February. It's no wonder that, when the ATI Greenhouse Club began selling its hydroponic leaf lettuce last year, it sold out in just two hours.

The Greenhouse Club dipped its proverbial toes in

the hydroponic water with a calcined clay pellet system it purchased four years ago. This year, the club was the recipient of three nutrient film technique (NFT) systems from CropKing of Lodi, Ohio. The donation was arranged by Natalie Bumgarner (PhD, Horticulture

and Crop Science, 2012), whose graduate research in hydroponic plant nutrition and lighting systems took place at OARDC.

Bumgarner said, "CropKing wants to encourage undergraduate education that exposes students to hydro-

ponics and other cropping systems." Bumgarner is a horticulturist at CropKing. She works in the company's onsite research and development greenhouses and also with growers, providing training and technical support.

Greenhouse Club members are responsible for lettuce during its entire cropping time. Students sow lettuce seeds in Rockwool cubes, transplant the seedlings into the NFT systems, prepare and maintain the nutrient solutions, including monitoring the strength and pH of the nutrient solutions so that the lettuce grows vigorously. "And deliciously!" added Greenhouse Club advisor Robert McMahon. Students also harvest and prepare the heads of lettuce for sale to Wooster campus



*Greenhouse Club members Amy Miller, Joshua Henry, Alex Wintucky, Stephanie Finch, Trevor Moore, Steve Ferullo, Ryan Henry, Laura Mast, Dillon Cyrus, and Jared Schuster with their nutrient film hydroponic system donated by CropKing of Lodi, Ohio.*

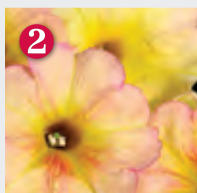


The colorful plantings that adorn ATI's campus every year are a visual treat for visitors and campus dwellers alike, and far more goes into the planning than deciding whether there will be orange or pink zinnias this year. There is an educational purpose at the heart of it all, from plant selection to greenhouse production to installation.

Each year, the garden planning group, which consists of interested horticulture faculty and staff, develops a design theme that will be executed in all the decorative areas of campus and Hawk's Nest Golf Course. "We brainstorm ideas and throw them all out on the table," said Terry Lanker, horticulture division chair. Some themes sound interesting but prove to be too difficult to execute in plant materials.

This year's theme is The Four Seasons, with plantings suggesting the summer, fall, winter, and spring through color and texture — and all the plants will be produced in ATI's greenhouses.

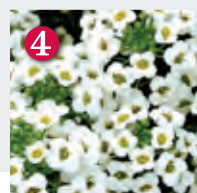
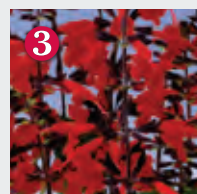
About 25 percent of the plant varieties in any given year will be ones that are known performers. "We've grown them before and we know they are reliable," said Lanker. It's a balancing act between showcasing an unproven new variety and relying on the tried-and-true, like "Moonson" marigold and "Fireworks"



gomphrena, which will be used this year in the "summer" garden.

In addition to the material to be used in the gardens, ATI's greenhouse also produces bedding flats, 4.5-inch pots, and hanging baskets for sale to the public. Last year, that was 1,000 flats, 8,000 4.5-inch pots, and 300 hanging baskets. "Our students grow all of it," said Robert McMahon, associate professor and coordinator of the greenhouse and nursery programs.

Greenhouse manager Amy Ryan ('10) noted that ATI is extremely fortunate in the support it receives from the greenhouse industry. "It can be a challenge to get the newest and hottest varieties, especially since we generally need small quantities." Seed, supplies, and plant material are often donated by alumni, such as Proven Winner brand annuals donated by alumna



Shanna Clark, marketing development and events coordinator for Four Star Greenhouse in Carleton, Mich., and Rieger begonias donated by alumnus Jacob Stockslager from his family's greenhouse near Dayton.

Second-year practicum students in the greenhouse program take on the duties of growers. "Each one is assigned a house and checks his or her crops twice a day," McMahon explained. There is a third of an acre in production greenhouses on campus, so the growers bear a great deal of responsibility. "Students oversee every step from seeding to sale," Ryan said. "They see the bad as well as the good — crop failures, pest problems — and learn how to handle them." And they supervise their "employees," the first-year students.

It's that experience that makes ATI's greenhouse graduates so sought-after by employers. "We have greenhouses large

and small contacting us for interns and graduates," McMahon says.

"That's how I know we're doing our job." ■ FRANCES WHITED

← Some of the varieties that will be used to carry out the ATI gardens' The Four Seasons theme are: (1) Spring, Geranium "Tango Lavender"; (2) Summer, Petunia "Suncatcher Pink Lemonade"; (3) Fall, Salvia "Forest Fire"; and (4) Winter, Sweet Alyssum "Snow Princess."

students and personnel.

"The timing of the donation worked out really well," Bumgarner said.

"The students were already excited about hydroponics and had some experience." In recent years, Bumgarner said, CropKing has seen an expansion of controlled environment agriculture, particularly in leafy crop production, thanks to the increasing emphasis on local production.

Proceeds from the lettuce sales help support Greenhouse Club activities like field trips, and the experience with hydroponic production will be an impressive addition to students' resumes.

■ FRANCES WHITED

## Keeping the Big Picture in Mind

Neither rain nor sleet keeps ATI plant ID courses from their appointed rounds on campus, as every horticulture graduate knows. Making sure ATI has the necessary specimens for plant ID courses also falls to the garden planning group.

Terry Lanker, horticulture division chair, explained, "We generally have two, or ideally three, of each specimen — one or two to teach and one to test."

Planting isn't the only decision to be made. Sometimes, trees need to be removed. "That's always a touchy subject on our

campus," said Lanker. Slated for removal this spring are the two large bald cypress trees (*Taxodium distichum*) growing on the south side of the bridge between Halterman and Skou.

The trees were planted in the mid-1970s by Ken Cochran, who is now curator of Secrest Arboretum but was then coordinator of ATI's nursery management program. Cochran wanted to see how well these denizens of the southeastern swamps would fare in that location. "I think we can now conclude that they

did pretty well," Lanker said, noting that the trees' roots have infiltrated drain tiles and are causing problems.

The wood from the trees will be milled and used to construct an information kiosk for the ATI gardens.

What will replace the trees has not yet been decided.

"We never plant a tree without a gathering of great horticultural minds and a discussion of this one versus that one in a particular spot," Lanker said.

■ FRANCES WHITED





*Roger Himes, Ohio 4-H Foundation President; Pat Brundige, Ohio 4-H Foundation Board Member; Bobby Moser, former Dean of the College of Food, Agricultural, and Environmental Sciences; and Tom Archer, State Leader, 4-H Youth Development and Assistant Director of Ohio State University Extension*

## New Endowment to Ohio 4-H Honors Bobby Moser

Pat Brundige is a very special donor who not only recognizes the impact that our 4-H programs have on youth and volunteers, but also the need for research to continually strengthen and improve Ohio 4-H.

**I**n honor of Bobby Moser's lifetime commitment to Ohio State University Extension, Ohio 4-H, and the land-grant mission of outreach, Brundige has made a very significant transformational gift to create an endowment to support research in youth development.

"With our changing and fast-paced world it is important to be innovative to attract and keep our 4-H youth," she said. "My hope is that this endowment will play a part in developing

new or enhancing already proven programs. It is a pleasure to be able to invest in what might be our next greatest generations."

This new endowment will allow Extension faculty and staff to apply for seed grants to support research in positive youth development, and it will also allow for implementation of new programs that come about as a result of that research. Research areas may include volunteer recruitment and retention for youth development

programs, impact of youth development programs on workforce development, and evaluation of efficacy of existing 4-H youth development programs.

"Investing in youth is one of the most significant investments one can make for a secure future," said Moser, who stepped down as vice president and dean of the College of Food, Agricultural, and Environmental Sciences in October 2012. "Pat's generous gift in youth development research seeds the generation of new ideas and programs devoted to improving young lives for generations to come. I admire her willingness to pay forward. I am honored to have this gift in my name from someone who has such vision for the future and appreciation for the development of young people."

"With our changing and fast-paced world it is important to be innovative to attract and keep our 4-H youth. My hope is that this endowment will play a part in developing new or enhancing already proven programs. It is a pleasure to be able to invest in what might be our next greatest generations."

—PAT BRUNDIGE





## SPOTLIGHT ON Patrick Nolan

Patrick J. Nolan, Associate Director of Development, joined the College of Food, Agricultural, and Environmental Sciences development team in July 2012 and is located at the OARDC/ATI Wooster campus. A graduate of CFAES, Nolan earned a degree in Agricultural and Extension Education and a graduate degree from Clemson University in Higher Education Administration. While at Clemson, he worked in the Office of International Education as well as assisted with the Office of Development for the university. Prior to joining Ohio State, Patrick worked as a development officer for Muskingum University. With his current position, he focuses his fundraising efforts on Ohio State University Extension, 4-H, and Energy Development initiatives. • “Coming from a long line of Buckeyes, I am excited to contribute to the *But for Ohio State* campaign as a way to help impact the university and the College of Food, Agricultural, and Environmental Sciences.”



## YOUNG ALUMNA MAKES COMMITMENT TO STUDENTS

Sandy Kuhn of Stoutsville, Ohio, has established a planned gift with the college to support the CFAES Alumni Society Undergraduate Scholarship Endowment Fund. A 1988 graduate of the college who majored in Agricultural Education, Kuhn understands the importance of higher education. // Choosing the alumni society scholarship fund was an easy choice for Kuhn. She has been heavily involved in several levels of alumni groups at Ohio State. First, she was the president of the agricultural education alumni society and then president of the college's alumni society. Currently, she continues to help with the silent auction at the annual alumni event, Fallfest, and is vice president of the Fairfield County OSU alumni club. // Her passion and allegiance for OSU alumni and higher education is immense. // “I had a wonderful experience at Ohio State and with the College of Food, Agricultural, and Environmental Sciences as an undergraduate student and had help through scholarships. I want to pay it forward to future students, so that they can have a great experience too,” Kuhn said. // Although planned gifts are typically contributions that older generations consider, Kuhn wanted to set up her gift early to make sure her wishes were known. Also, after the passing of a dear college friend from cancer put life into perspective, she wanted to ensure her intentions were recognized and she was able to document that with the university. // Kuhn completed a Master of Science in Agricultural Education in 1995 and an MBA in 2004 at The Ohio State University. And she is very active in her community: In addition to her alumni work, she officiates volleyball and volunteers in her church. She previously worked at OSU South Centers in Piketon, Ohio, with berry growers on sales, marketing, and product development. // Kuhn's gift is another example of the *But for Ohio State* campaign priorities, in Placing Students First, a priority set forth by the university to enhance scholarship dollars for students.



## CAMPAIGN PROGRESS

# BUT FOR OHIO STATE

The “But for Ohio State” campaign is a \$2.5 billion fundraising endeavor that invites those who believe in

Ohio State to invest in our students, our faculty, and our potential. With more than \$1.45 billion of the goal already raised, more than 450,000 alumni and friends have contributed to the campaign so far. The university's focus is on these five priority areas: Place Students First, Elevating Faculty and Academic Enterprise, Creating Modern Learning Environments, Emboldening Our Research Agenda, and Driving High-Impact Innovation. • The College of Food, Agricultural, and Environmental Sciences has a similar focus for the campaign. With a campaign goal of \$150 million for the college, the signature areas have been identified as Food Security, Production, and Human Health; Environmental Quality and Sustainability; and Advanced Bioenergy and Biobased Products. As of February 28, 2013, the college has raised over \$66.7 million toward that goal. • Similar to the university, the college has had a tremendous amount of support thus far, and will continue to grow through the public phase of the campaign. • For more information about the campaign, call the CFAES Development office at (614) 292-0473 or visit [www.osu.edu/giving](http://www.osu.edu/giving).

### REASONS FOR CFAES TO SAY “THANK YOU!”

\$ 66,718,664

The *But for Ohio State* campaign is a \$2.5 billion fundraising endeavor that invites those who believe in Ohio State to invest in our students, our faculty, and our potential. The College of Food, Agricultural, and Environmental Sciences goal is to raise \$150 million during the campaign.

\$150 million



“Our influence on issues of global importance has never been more vital, and now more than ever, people everywhere are looking in one direction—to CFAES—to confront the fundamental challenges of our planet. Food security, production, and human health; biobased energy resources; and environmental quality and sustainability all represent areas of strength for CFAES and opportunities to find solutions for a world in need of answers.”

—DEAN BRUCE A. MCPHERON

# CFAES Alumni Society Awards

## 12 Recognitions, 4 Scholarships

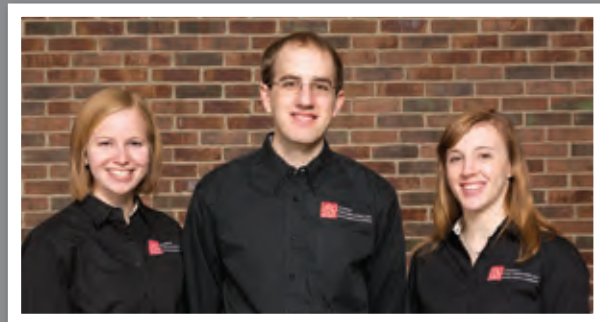
Congratulations to our 2013 Alumni Award and Alumni Scholarship winners, presented on March 2. Not pictured here is the winner of the International Alumni Award: Rodrigo A. Chaves, PhD, Agricultural Economics and Rural Sociology, who was unable to attend the ceremony. We congratulate him and all of our awardees, and special thanks to the CFAES Ambassadors for hosting our award winners!



**Meritorious Service Award** Vice President and Dean Bruce McPherson with Raymond A. Miller, BS, MS, and PhD, Agricultural Education.



**Young Professional Achievement Award** Joseph A. Shultz, BS, Agribusiness and Applied Economics; Daniel L. Toland, BS, Agricultural Communications; Vice President and Dean Bruce McPherson; and Emma Buck Dsouza, MS, Food Science and Nutrition.



**Alumni Society Undergraduate Scholarship Recipients** Stephanie Verhoff, Sustainable Plant Systems; Michael Hannewald, Sustainable Plant Systems; Mara Gordon, Agribusiness and Applied Economics. Not pictured: Beverly Lennartz, Agribusiness and Applied Economics.



**Distinguished Alumni Award** In front, from the left: Dianne E. Shoemaker, BS, MS, Dairy Science; Vice President and Dean Bruce McPherson; Jonathan C. Gerken, BS, Agronomy; and in the back, from the left, Miguel A. Muñoz, MS, PhD, Agronomy; Nick Christians, MS, PhD, Agronomy; Rodney J. Bothast, BS, Animal Science; Robert M. McClelland, BS, Agricultural Economics. Not pictured: Frederick A. Hegele, BS, Food Technology.



**CFAES Ambassadors** In front, from the left, Jessica Rose, Food Business Management; Caroline Wehl, Agricultural Communication; Amy Jo Frost, Agriscience Education; Mara Gordon, Agribusiness and Applied Economics; Suzannah McMullen, Agriscience Education; Lauren Eisemann, Animal Sciences; Jill Tyson, Advisor. In back, from the left, Michelle King, Sustainable Plant Systems; Katherine Wenner, Animal Sciences; Caitlyn Black, Culinary Science; Michael Hannewald, Sustainable Plant Systems; Vice President and Dean Bruce McPherson; Brent Stammen, Agricultural Communication; Stacie Seger, Agricultural Communication; Derek McCracken, Agriscience Education; Stephanie Verhoff, Sustainable Plant Systems.



# ALUMNI NEWS



PHOTO COURTESY THE OHIO STATE UNIVERSITY PHOTO ARCHIVES

Did you graduate from the College of Agriculture in the 1950s? Want to catch up with other people who did?

On Wednesday, May 29, a group of 1950s alumni will gather for lunch and a short program in Columbus. Meeting since about 1972, these biennial gatherings were recently increased to meet annually.

Spearheaded for years by Chuck Ingraham, meetings have been held in a variety of locations around Columbus, most recently in a meeting room at First Community Village on Riverside Drive.

Alumni at the 2012 reunion included Bob Stoltz (1951, Agricultural Engineering), Jean Stoltz (1950, Home Economics), Chuck Ingraham (1950, 1958, 1964, Agricultural Economics), Norma Pitts (1963, Human Ecology, 1968, Home Economics), John Bay (1952, Dairy Science), Barbara Bay (1946, Human Nutrition and Food Management, 1951, Human Ecology),

Joan Herr (1954, Human Nutrition and Food Management), Don Herr (1951, 1965, Agronomy), Lucy Dye Baumgardner (1949, Home

Economics), Larry Rhonemus (1954, Animal Science, 1965, Agricultural Education), Eileen Donovan Rhonemus

(1955, Home Economics), John Montgomery (1952, Rural Sociology), Wendell Litt (1950, 1973, Agricultural Education), Charles Hahn (1951, 1963, Agricultural Engineering), Edie Hahn (1951, Home Economics), Willard Snider (1951, Agricultural Education), Joanne Snider (1951, Home Economics), Glenn Irwin (1951, Rural Sociology), and Celia Dye Irwin (1952, Education).

Also regularly attending the luncheon are non-alumni Bernie Litt and Dorothy Montgomery. At the 2012 gathering, Montgomery led a program in which she presented her apron collection.

The reunion concluded as attendees reminisced about their many shared experiences growing up on farms around Ohio.

For more information about the 2013 reunion on May 29, please e-mail Chuck Ingraham at [chuck3095@columbus.rr.com](mailto:chuck3095@columbus.rr.com) or call Jean Stoltz at (740) 927-2642.



## Calendar of Events

### Senior Toast

Friday, May 3, 2013

10:30 a.m.–Noon

Does your company want to donate a door prize? Contact Amber Pasternak at (614) 247-2745 or [pasternak.6@osu.edu](mailto:pasternak.6@osu.edu)

### Farm Science Review

September 17–19, 2013

Hospitality Tent, Molly Caren Ag Center  
London, Ohio

### Ag Fallfest 2013

Saturday, October 19, 2013

Iowa vs. Ohio State

Game ticket packages are only available to Sustaining Members of the OSU Alumni Association.



## Hold the Date: Ag Fallfest 2013

**date:** Saturday, October 19, 2013

**time:** Three hours before kickoff

**location:** Nationwide and Ohio  
Farm Bureau 4-H Center

Plus, Silent Auction for Alumni  
Scholarship Endowment

Watch the summer issue of  
*Continuum* for application  
instructions, costs, etc.

**Must be OSU Alumni Association  
Sustaining Member to purchase  
game ticket packages. Call  
(800) 762-5646 or (614) 292-2281  
with questions about OSU Alumni  
Association Membership.**

**Volume 5 ▶ Issue 2**

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ADDRESS SERVICE REQUESTED

## VP's Corner

**Bruce A. McPheron**

*Vice President for Agricultural  
Administration and Dean,  
College of Food, Agricultural,  
and Environmental Sciences*



Friends,

We stand at the doorway to spring — another growing season for those of us with our hands still in the soil.

Spring is also the time of year when we focus on our budgets. The Ohio budget proposed by Governor Kasich added support to the instructional line for Ohio State and Ohio's public higher education institutions, and it maintained level funding for our research and extension missions. I had the chance to testify to the Ohio House of Representatives and make the case for support for the excellence of our college. The legislature is now hard at work on the new state budget, but our voice is being heard. You can help by continuing to speak to your elected officials about the impact of our work.

I have learned an incredible amount about an extraordinary organization over these past four months, but I also know I have much left to learn. Just like you, I look forward to reading these fascinating stories in each issue of *Continuum*.

Enjoy!

*Continuum* is produced by the College of Food, Agricultural, and Environmental Sciences at The Ohio State University. View *Continuum* online at <http://cfaes.osu.edu/about/continuum>.

### Section of Communications and Technology

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The College of Food, Agricultural, and Environmental Sciences and its academic and research departments including Ohio Agricultural Research and Development Center (OARDC), Agricultural Technical Institute (ATI) and Ohio State University Extension embraces human diversity and is committed to ensuring that all research and related educational programs are available to clientele on a nondiscriminatory basis without regard to age, ancestry, color, disability, gender identity or expression, genetic information, HIV/AIDS status, military status, national origin, race, religion, sex, sexual orientation, or veteran status. This statement is in accordance with United States Civil Rights Laws and the USDA.

*Bruce McPheron, Vice President for Agricultural Administration & Dean*

For Deaf and Hard of Hearing, please contact the College of Food, Agricultural, and Environmental Sciences using your preferred communication (e-mail, relay services, or video relay services). Phone 1-800-750-0750 between 8 a.m. and 5 p.m. EST Monday through Friday. Inform the operator to dial 614-292-6891.