

» continuum

News from the College of Food, Agricultural, and Environmental Sciences

Summer 2014

..... a

BIG heart

Though they never attended Ohio State, the Winfoughs' gift will long support CFAES student success.

Having expanded his father's farm and grocery into a successful farm supply store, Arthur Winfough Jr. was a shrewd businessman, well known in the agricultural community for his big heart.

He had made a lot of money and invested in farmland in Pickaway County, Ohio.

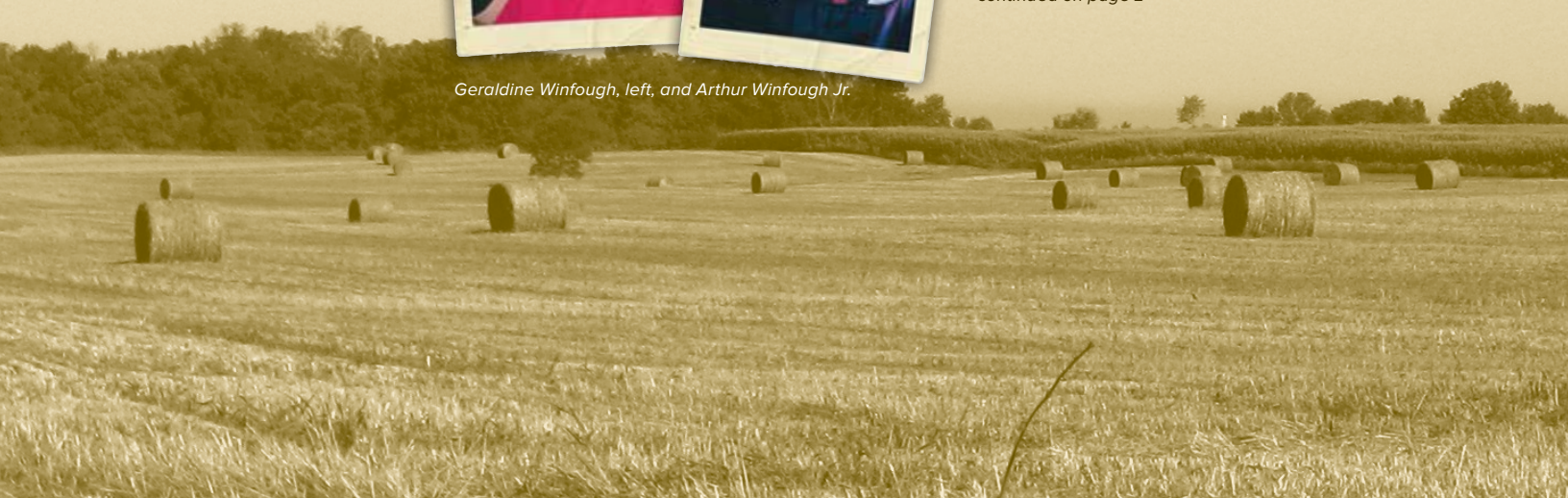
But for all his accomplishments, he had always wanted to attend The Ohio State University College of Food, Agricultural, and Environmental Sciences.

That desire, along with a love of agriculture shared by his late wife Geraldine, led to a \$2.8 million donation to the college from their estate.

continued on page 2



Geraldine Winfough, left, and Arthur Winfough Jr.



300 BUILDINGS, \$300-\$400 MILLION, ONE COLLEGE
[page 4](#)



COLLEGE DIVES DEEP INTO ISSUES OF WATER
[page 6](#)



A GLOBAL EDUCATION FOR TODAY'S WORLD
[page 10](#)



NEW PATHWAYS OPENING STEM DOORS
[page 14](#)

HEART *continued from page 1*

An artist's rendering of the new Library and Student Success Center.



The Winfough gift establishes three new endowments to the college:

- **The Geraldine and Arthur Winfough Jr. Scholarship Fund** will support undergraduate students as part of the Pat and Bobby Moser Scholars Program with four-year scholarships for one or more students, with a preference given to those from Pickaway County, Ohio.
- **The Geraldine and Arthur Winfough Jr. Fund for STEM Education in Pickaway County** will support science, technology, engineering and math education programs administered by Ohio State University Extension in Pickaway County in partnership with primary and secondary schools there.
- **The Geraldine and Arthur Winfough Jr. Fund for Pickaway County Extension Education** will help provide professional development to Extension educators based in Pickaway County.

In addition, the donation is also kick-starting construction of the new CFAES Library and Student Success Center.

“Junior always liked Ohio State,” said Bob Huffer, a lifelong friend and attorney for his estate. “He had said that ‘I wanted to go to Ohio State,’ but his dad couldn’t see it.”

The Mount Sterling, Ohio, couple had been thinking about the local community in their generosity, and that community will see great benefit from these endowments for years to come, Pickaway County Extension Educator Mike Estadt said.

“I have already heard from teachers and directors in our community who are interested,” Estadt said. “Our farmers will see a lot of benefit from it.”

The couple had no children of their own, but they shared a “deep love of the land and of the agricultural community,” former Ohio State Board of Trustees Chair Shirley Dunlap Bowser said.

Arthur Winfough Jr. was “a big-hearted man known for his prize herd of cattle,” she said.

Geraldine Winfough owned and operated a general store.

“Once you’re a farmer, you want to give back,” Bowser said. “It is just wonderful that the final outcome of their generosity will go to the agriculture community.”

“The generosity of the Winfoughs

illustrates the impact that our friends can have on the future,” Dean Bruce McPheron

said. “While Mr. and Mrs. Winfough were not directly connected with our college during their lifetimes, their bequest will ensure that Pickaway County and all of Ohio continue to grow as an agricultural powerhouse.”

The Winfough estates donated 387 acres of Pickaway County farmland, which was accepted by the Ohio State Board of Trustees. Proceeds from the sale of that property will

fund the endowments and the Student Success Center project, a renovation of the library and administrative offices at the Agricultural Administration Building on Fyffe Road.

McPheron added that “this gift will allow us to focus on the highest needs of the college. We’ll support students, both through scholarship opportunities and through the creation of an amazing new learning space that starts to bring Ohio State’s agricultural facilities into the 21st century.”

More information about this donation and others to the College of Food, Agricultural, and Environmental Sciences can be found at cfaes.osu.edu/development.

MATTHEW MARX

“This gift will allow us to focus on the highest needs of the college. We’ll support students, both through scholarship opportunities and through the creation of an amazing new learning space that starts to bring Ohio State’s agricultural facilities into the 21st century.”

—DEAN BRUCE MCPHERON

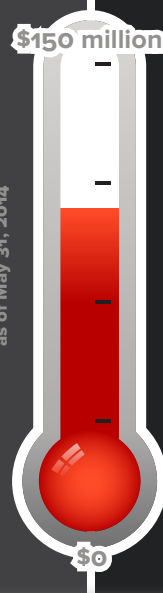
CFAES CAMPAIGN PROGRESS

Reasons for CFAES to say “thank you!”

\$ 89,795,146

The College of Food, Agricultural, and Environmental Sciences’ goal is to raise \$150 million during the university’s *But for Ohio State* campaign, which 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. Overall, the university has raised \$1.92 billion so far.

Progress toward CFAES fundraising goal as of May 31, 2014



“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 MCPHERON

BUT FOR OHIO STATE



KEITH SMITH TO RETIRE FROM OSU EXTENSION

Following 23 years of service, Keith L. Smith will retire as director of Ohio State University Extension effective June 30, 2015.

“Keith Smith has been a tireless advocate for the university’s Extension initiatives for more than two decades,” said Ohio State Interim President Joseph A. Alutto. “The university and the citizens of Ohio will continue to benefit from his leadership in both program and policy development for years to come.”

Smith came to Ohio State in 1980, working in personnel development for OSU Extension, and later as associate director of Extension. He also worked in Extension at Iowa State University, and as a vocational agriculture teacher and Extension agent in Utah.

“During his 20-plus years as director of Extension, Keith has led the organization through significant growth and continues to be a steady guide as the organization adjusts to rapid, societal changes,” said Bruce McPheron, Ohio State’s vice president for agricultural administration and dean of CFAES.

Smith’s impact has been felt nationally. “Keith Smith’s long tenure of significant service is well recognized not only within the institution and state, but at the national level as well,” said Ian L. Maw, vice president for Food, Agriculture, and Natural Resources at the Association of Public and Land-grant Universities.

“Through his sustained leadership, Keith has contributed greatly to the continuing successes of Extension in all venues with which he has interacted,” Maw said.

Smith is known for his voracious reading, his penchant for using stories and quotes as a way to illustrate a point, and his passion for developing leadership in Extension.

When he accepted Extension’s National Distinguished Service Ruby Award in 2002, he quoted author Peter Drucker saying, “Management is doing things right; leadership is doing the right things.”

“I plan on continuing to give my best in time and effort toward our vision for the future. We will push forward with our strategic planning effort, enjoy Extension’s 100-year celebration, and engage in dialogue on making OSU Extension even stronger in the future,” he said.

Smith received his BS and MS degrees from Utah State University and his PhD from Iowa State University, all focused on agricultural education. SUZANNE STEEL





300 BUILDINGS, \$300–\$400 MILLION, **ONE COLLEGE**

The College of Food, Agricultural, and Environmental Sciences' infrastructure footprint is, like everything else about it, big: CFAES controls roughly 300 buildings on its Columbus and Wooster campuses as well as in other locations throughout the state.

However, many of these buildings are well past their useful lives, no longer meet the requirements for effective teaching or research, are in need of serious renovations, or have become outdated with regard to technology or industry standards.

"We have a need not just for renovating and retrofitting, but for serious and more strategic thinking about the future of our infrastructure and what that means for the quality of teaching, research and outreach we do in this college," said Ron Hendrick, CFAES senior associate dean.

To accomplish such a goal, the college has begun drafting a facilities master plan that will address the need for new buildings and renovations in the next 15–20 years.

The plan, Hendrick said, sprang out of the vision for CFAES sketched out in Ohio State's overall master plan, which calls for relocating college infrastructure on the Columbus campus across the Olentangy River and incorporating it into the core campus area.

"That was a very optimistic notion that didn't address several program needs," Hendrick said. "So we realized we needed a comprehensive master plan that would address not only the future of the college on the Columbus campus but also on the Wooster campus and our outlying properties."

The college's master plan has an estimated cost of \$300–\$400 million for both campuses. This is the amount of money it would take to construct new facilities and bring the roughly 300 buildings that the college controls to near-new conditions.

The plan, which is currently in draft form, calls for CFAES to make decisions about facilities based on program needs and to seek new opportunities for leveraging resources both within the college and, in the case of the Columbus campus, with other colleges.

"For example, we want OARDC and ATI to become more integrated as one Wooster campus, which would lead to the sharing of facilities and other resources where

appropriate," Hendrick said. "We also need to consider a more effective alignment with other Ohio State colleges. The significant cost of this plan and our connections across campus require that CFAES partner with other colleges to make it a reality."

This alignment would become evident in the way new buildings will be constructed and space shared, Hendrick said.

"Maybe we will be co-located with other colleges in these buildings," he explained. "But we also need to ask questions such as whether some elements of the college are best served in new buildings on the current campus instead of moving to the other side of the river."

In the case of the Wooster campus, some buildings that are near or at the end of their lifetime will be demolished and new facilities built. One example is Thorne Hall, which is a top priority on the list and will be replaced. At ATI, Skou and Halterman halls also face issues that will be addressed, Hendrick said.

In addition to the con-

struction of new buildings and the renovation of others, the plan calls for making important improvements to facilities such as Kottman Hall that have been ignored for a long time and which will be eventually demolished according to university plans.

"These investments need to be made because these facilities are critical to our mission right now and we will still have them for the next few years," Hendrick said.

At this time in the planning process, the college is assessing capital needs. A finalized plan will be completed in the summer.

In terms of funding, Hendrick said the college is in the process of figuring out ways to leverage resources from development, partnerships with other colleges, support from the state, and possible partnerships with the private sector.

"Our facilities plan is program-driven," he said. "We will renovate and build in a way that serves our people in a better, more coordinated and sustainable way."

MAURICIO ESPINOZA

FIRST IN THE PECKING ORDER: PLANNING FOR LEADERSHIP

One crucial aspect of CFAES's infrastructure master plan is how to handle the many livestock and poultry facilities the college manages on both the Columbus and Wooster campuses.

That's why a separate committee has been formed to assess the condition of current facilities and determine what the college will need to be effective in the future in this particular area.

"Our plan is to make Ohio State a leader in animal agriculture research," said OARDC associate director Dave Benfield, who leads the committee. "So we are taking a hard look at what we have,

what's needed, and where those facilities will be located."

Most of the college's animal facilities were built between the 1950s and 1970s and are outdated compared to what the food-animal industry is using today.

"We need to catch up and also to get ahead," Benfield said. "The new facilities must be technologically advanced and must be sustainable, as they will serve our needs for the next 30 years or so. We need to be able to sustain that technology over time."

The new facilities also are expected to be integrated across the college to avoid duplication and be appropriate for the threefold mission of the college in teaching, research and outreach.

MAURICIO ESPINOZA



COLLEGE DIVES DEEP INTO ISSUES OF WATER

A river runs through the College of Food, Agricultural, and Environmental Sciences' campus in Columbus, and it both serves and symbolizes the college's focus on water.

"If we think about some of the most pressing questions in science and society, today and in the future, a lot of them revolve directly around water," said Mazeika Sullivan, clad in hip boots, as he led a tour in April of the college's Wilma H. Schiermeier Olentangy River Wetland Research Park.

"The growing global population, public health and access to drinking water, irrigation for food production, preserving biodiversity, climate change dynamics—they all come back to water," said the assistant professor of aquatic and riparian ecosystem ecology.

The 52-acre Schiermeier, home to teaching and research on wetlands and their crucial functions—they're not called nature's kidneys for nothing—is just one example of the many resources the college is bringing to bear on water.

"There's a tremendous host of professionals in the college coming at water quality from multiple angles—from a social science perspective, from an economic perspective, from a food production perspective, and from ecological and conservation

perspectives," said Sullivan.

The result, he said, is that the college has the collective expertise needed "to be answering questions that are important to science and society in very impactful ways."

Soil scientist Libby Dayton is one of those professionals. She leads the On-Field Ohio project, which aims to revise the state's Phosphorus Risk Index. Farmers throughout the state use the index to predict and reduce the risk of phosphorus runoff from their farms. The nutrient is tied to algal blooms in western Lake Erie, Grand

Lake St. Marys and other bodies of water.

Rafiq Islam, soil, water and bioenergy resources program leader at the college's Ohio State University South Centers, is another. He's part of a team studying, demonstrating and sharing the how-to's of "ECO-farming." The new system employs no-till, cover crops and other sustainable practices to boost a farm's production and profits while shrinking its environmental footprint, including its phosphorus runoff.

Kris Jaeger, assistant professor of stream geomorphology, is a third. She's part of a ramped-up core of faculty whose work targets water.

"In Ohio, we have access to a variety of different landscapes so we can keenly look at the mechanisms of water quality," she said as she stopped along the

DID YOU KNOW ?



• Stone Lab is the longest established freshwater biological field station in the United States. stonelab.osu.edu

• Sullivan recently won Ohio State's 2014 Alumni Award for Distinguished Teaching. go.osu.edu/Sullivan

• ECO-farming's Islam has been chosen as a Fulbright scholar. go.osu.edu/IslamFulbright

• The Olentangy River Wetland Research Park is a designated Wetland of International Importance, the first and only one in Ohio. go.osu.edu/olentangywetland



Graduate students Danielle Vent and Adam Kautza and Assistant Professor Mazeika Sullivan look out on the Wilma H. Schiermeier Olentangy River Wetland Research Park in Columbus.

Olentangy River as one of the hosts of the tour.

“We’ve got a broad suite of scientists who work well interdisciplinarily,” she said above the sound of the river tumbling over rocks. “We also have some good data sets on water quality monitoring, both on the wetlands and here on the Olentangy, which we can build on to evaluate ecosystem changes.”

Suzanne Gray, assistant professor of fish ecology, was hooked by that deep, wide approach. The Nova Scotia, Canada, native came on board last year.

“I was really excited to come here because of the multidisciplinary aspects of the work and the different dimensions involved,” she said while also a host of the tour, “not just to work on fish biology and water quality, but also to work with people who think of things from the human perspective.”

For example, “there are faculty working with land use practices and agriculture and how that’s going to flow downstream into the waters where I’m studying the fish,” she said.

“Many of us have come to understand that water is the next generation’s oil.”

—CFAES DEAN BRUCE MCPHERON
LAST YEAR AT THE
WILMA H. SCHIERMEIER
OLENTANGY RIVER WETLAND
RESEARCH PARK

“That’s the reason I came here—to work with people who think of things not only from the fishes’ perspective, in this case, but in a way that we can work together to look at issues more broadly.”

Behind her, CFAES stream ecology students waded in a fast-moving riffle, using an electrofishing device to sample fish species, a way to gauge the river’s health. Tree swallows flew overhead. Sunlight flashed on the riffle. Yards away, runners and bicyclists raced past on the Olentangy Greenway Trail. A mallard duck landed on the river’s far bank near the blue and orange tents of a homeless encampment.

“Eventually, all things merge into one,” Norman Maclean wrote at the end of “A River Runs Through It.”

That “one” may boil down to water. “We all need clean water. It’s such a compelling and pressing problem for so many people,” Jaeger said. “The fact that it’s inherently important also makes it really interesting to me as a scientist.”

“Water quality,” Sullivan said, “is an absolutely critical piece of our daily lives and our future.” KURT KNEBUSCH

A SAMPLING OF THE COLLEGE’S WATER WORK

Here are more examples of CFAES programs targeting water quality.

ON-FIELD OHIO

Mentioned in the main story, the project involves sampling in 30 farm fields in the Scioto River, Western Lake Erie Basin and Grand Lake St. Marys watersheds (the latter two hit hard by phosphorus runoff and algal blooms), \$2 million in grants from the U.S. Department of Agriculture and concerned farmer groups, and more than 5,000 water samples and counting. go.osu.edu/OnFieldOhio

ECO-FARMING

Also mentioned in the main story, the new system aims to maximize a farm’s ecosystem services. In doing so, among other things, it reduces the use of reactive nutrients such as phosphorus. Runoff of excessive phosphorus can fuel algal blooms. go.osu.edu/ECOfarming, go.osu.edu/ECO (video)

RIVER RESTORATION

Backed in part by a National Science Foundation grant, Sullivan and Jaeger are studying how dam removal affects a river’s channels, ecosystems and water quality. Two former dams in Columbus are their subjects. More and more government agencies are taking down unneeded dams—one goal being to boost water quality. go.osu.edu/RiverRestoration

STONE LAB, OHIO SEA GRANT EXTENSION

Scientists at the lab do long-term monitoring of Lake Erie’s water quality. Located at Put-in-Bay, the lab hosts the National Oceanic and Atmospheric Administration’s annual algal bloom forecast. In summer, students from CFAES and elsewhere take lake and water science classes. Ohio Sea Grant Extension specialists, based in Ohio’s lakeshore counties, share the lab’s findings with the public. go.osu.edu/LakeErieScience

AGRONOMIC CROPS TEAM

The team works with farmers throughout the state to improve and use nutrient application best management practices, key to curbing algal blooms. go.osu.edu/AgronomicCropsTeam

TWO-STAGE DITCH DESIGN

Co-developed by CFAES researchers and employed by more and more farmers, the advanced design reduces nutrient runoff plus soil erosion and upkeep costs. go.osu.edu/UcD (video)

OHIO WATERSHED NETWORK

Specialists with the network team up with communities to protect rivers, lakes, streams and the lands around them. One goal: Keeping sources of drinking water safe. ohiowatersheds.osu.edu

Certified Crop Adviser Dale Sloan values the work of researchers with Ohio State University's College of Food, Agricultural, and Environmental Sciences.

As the owner of Sloan Ag Consulting, he is able to learn the latest agronomic updates, tips, techniques and information from CFAES faculty through workshops, conferences and presentations and then pass that knowledge on to farmers across the state as he advises them on topics ranging from soil fertility to nutrient management.

"Extension helps crop consultants bring farmers unbiased research that the university and Ohio State University Extension does," Sloan said. "As a crop consultant I can evaluate different plots and information that Extension puts out and help the farmer evaluate that information."

This is but one example of how CFAES is working to reach Ohio farmers one crop adviser at a time.

Through the work the university does to continually educate Certified Crop Advisers, Ohio State's impact on Ohio crops is felt on millions of acres of farmland statewide, said Bruce McPherson, vice president for agricultural administration and dean of CFAES.

"We need to maximize our impact, and a great way to accomplish that is by magnifying our message through 'teaching the teachers,'" he said. "That's what continuing education for CCAs can accomplish."

"This is excellent return on investment for the tax dollars that support our work in research and Extension. Not only are we extending the reach of our programs, but we're supporting a private sector business model by providing science-based education to these small business operators."

CFAES faculty work year-round to train crop advisers through agronomic workshops, presentations, schools and conferences, providing the most up-to-date information that farmers need to increase yields,

increase their financial bottom line, and boost the state's overall economy.

"Because they work with farmers on a day-to-day basis, CCAs help to expand Ohio State University Extension's reach," said Jim Hoorman, an OSU Extension educator and assistant professor. "There are only a finite number of Extension educators, so by working to educate crop consultants who work with farmers directly, they can greatly spread that education throughout the state and into neighboring states."

This year, more than 400 Certified Crop Advisers attended Ohio State's Conservation Tillage Conference, which is offered annually at Ohio Northern University by OSU Extension and the Ohio Agricultural Research and Development Center.

The conference features some 60 presenters, a "Corn University," a "Soybean School" and workshops on topics such as cover crops, nutrient management, water quality, advanced scouting and machinery, no-till, soil quality, seeding technology and precision farming. The conference also offers continuing education credits for CCAs, with an emphasis on soil and water and nutrient management hours, organizers said.

The overall impact is immense, considering that crop advisers are able to take the knowledge they've gained from the conference and use it when they're advising farmers, Hoorman said.

According to a recent OSU Extension survey of 50 crop consultants and agribusinesses, CCAs consulted on an average of 19,296 acres per consultant for a total of 964,815 acres of cropland, he said.

"We had some consultants who reported (consulting on) 40,000 acres or more and a couple who reported (they consulted on)

over 100,000 acres in the past year," Hoorman said. "And when you consider that more than 400 Certified Crop Advisers typically attend the conference, that's millions of acres of farmland that benefit from the conference."

In fact, the economic impact that crop advisers can have on farmers can easily be \$100 per acre, said Joe Nester, an independent CCA and owner of Nester Ag. The training that crop advisers get from Ohio State through programs like CTC can offer advisers a year's worth of training over a couple days, he said.

"CCAs work hand-in-hand with farmers but they need that constant update of new data, technology, processes and equipment that they can take back to the farmer customer and help them with their bottom line," Nester said. "That's a significant impact for farmers, who have a huge outlay and a lot of risk."

"So this information is critical for them to stay on the cutting edge."

Sloan agrees.

"I'm required to take continuing education and my clients want me to stay on top of the latest information going on out there," Sloan said. "So a meeting like CTC is a good way to get a cross section of everything that is up-to-date in the industry."

Randall Reeder, a retired OSU Extension agricultural engineer and conference organizer, said the goal is to present information that leads CCAs to help farmers produce higher yields at less cost and earn higher profits.

"The ultimate goal is to keep providing the most current information to farmers and CCAs for the benefit of all farmers, producers and landowners across the region," Reeder said.

"And ultimately the people who benefit the most are consumers who are able to have access to the best quality products as a result." TRACY TURNER



CFAES faculty work year-round to train crop advisers, who in turn work directly with farmers, leveraging the university's research and Extension work.



OHIO STATE
REACHES
MILLIONS
OF ACRES
OF OHIO
CROPLAND
THROUGH
**CERTIFIED
CROP
ADVISERS
TRAINING**



A **GLOBAL EDUCATION** FOR TODAY'S WORLD

Animal sciences major David Minich, who is entering his senior year in the fall, is a study abroad veteran: He traveled to Ecuador as a freshman, crossed the Atlantic to Ireland in his second year, and recently came back from the South Africa May session program.

For the Cincinnati native, studying abroad is not just a great opportunity to see the world and gain a better perspective of global issues. It's also an integral part of his academic training and a perfect complement to the education he is receiving at Ohio State.

"This South Africa program is all about exotic animal behavior," Minich said. "My career goal is to work with exotic animals at a zoo, so when I saw the program I knew I had to apply. This is such an excellent educational opportunity to learn how other countries manage their animal populations and what their policies are. It's nothing like you would get sitting in a classroom."

Minich's conviction is echoed by CFAES study abroad specialist Kelly Newlon.

"This year we have concentrated on shoring up the academic integrity of our programs, so that in addition to personal growth they also pro-


vide even more tangible academic development for students," Newlon said.

CFAES is a leader at Ohio State in providing meaningful study abroad programs and in the number of students taking part in them.

In the 2013–14 academic year, the college offered 21 programs, five of which were new (including the South Africa trip). On average, more than 40 percent of CFAES students take part in study abroad programs, compared to the university's overall rate of 20 percent. This year, 248 CFAES students studied abroad.

CFAES is also proactive when it comes to helping students afford the study abroad experience: All eligible students receive grants ranging from \$150 to \$750 to help finance their trips. Most of these funds come from endowments supported by alumni, faculty and staff.

MAURICIO ESPINOZA



"This is such an excellent educational opportunity to learn how other countries manage their animal populations and what their policies are. It's nothing like you would get sitting in a classroom."

—DAVID MINICH

David Minich has been to Ecuador, Ireland and South Africa. He sees study abroad programs as an extension of his academic training.

INTERNSHIPS, JOBS AND LASTING PARTNERSHIPS

Internships are a key component of the educational experience for CFAES students. At Ohio State ATI, all students enrolled in an associate of applied science major complete a paid industry internship as part of their degree requirements.

The inclusion of an internship in the curriculum not only enriches ATI students' educational preparation—it makes them more successful in the job market.

"The experience students gain during internships makes them highly employable," said ATI interim director Jim Kinder. "Many employers have been hiring our students as interns for dozens of years and frequently offer them full-time employment after graduation. This tells us that we are keeping our curriculum relevant and providing students with skills that employers need."

About 70 percent of ATI students who are planning to obtain full-time work after graduation have a job in hand before they get their diploma. Internships are crucial to this high placement rate.

Many Ohio employers see the value of ATI students to their businesses and have developed long-lasting partnerships with this institution.

"Our company has been hiring ATI students for over 30 years, and we started offering internships in the past 12 years," said Dale Leppo, chairman of Leppo Inc., which sells and rents a variety of off-road power equipment in northeast Ohio. "ATI

grads have the technical skills as well as the business and communication skills that we need in this service-oriented business to be successful."

One former intern now employed by Leppo is Andy Wentling, a power equipment major who began doing the "dirty work" 12 years ago and is now being promoted to Canton location manager. "My internship got me in the door and taught me additional skills," he said. "Thanks to that, I already had a job in my second year of school."

A member of ATI's Key Advisory Committee, Leppo also provides \$20,000 a year to ATI to support scholarships and for other uses. Additionally, income generated by an endowment established in 1991 by Leppo in honor of his parents has funded 47 scholarships for power equipment technology students.

Another employer who provides internships to ATI students is Cedar Lane Farms, a Wooster greenhouse. Its owner, Tom Machamer, graduated from ATI in the 1970s and was an intern and an employee at the business he now owns.

"I hope to own a greenhouse some day," said Jessica Coulter, a greenhouse management major and one of three students who interned at Cedar Lane in the spring semester. "Here I'm learning many organizational skills, retail and sales aspects necessary for running a business that I hope to take with me."

MAURICIO ESPINOZA



MAMBOURG SCHOLARSHIP PROVIDES FIRST 4-YEAR FULL SCHOLARSHIP FOR CFAES

The college can now offer its first four-year, in-state tuition scholarship thanks to a gift from the estate of Lloyd and Lorayne Mambourg of Texarkana, Arkansas.

The first recipient of the scholarship is Megan Besancon (pictured above), from Sterling, Ohio, in Wayne County. A committee selected her from 39 incoming freshmen who had been invited to the half-day CFAES Buckeye Scholarship Competition in March.

"It was amazing! I am so thankful," said Megan, a recent graduate of Norwayne High School who plans to major in agricultural communication.

The Lloyd and Lorayne Mambourg Scholarship Fund is an award from a charitable endowment in Texarkana established by the late couple's estate. Another scholarship, the Lloyd L. Mambourg Agriculture Student Support Endowment Fund, was established in 2012.

Mr. and Mrs. Mambourg, formerly of Medina County, Ohio, both grew up on Ohio dairy farms and had lived in the state for many years before retiring in Texarkana, said Clay Roberts, a trustee of the estate.

The couple had maintained strong ties to the College of Food, Agricultural, and Environmental Sciences. Mr. Mambourg, who graduated with a degree in agricultural education in 1954, died in 2007. He worked for Borden and for the U.S. Department of Agriculture. He also was a farmer, and served in the U.S. Coast Guard during World War II.

Mrs. Mambourg, an insurance broker whose maiden name was Ganyard, died in 2011. Her ancestors were among the first settlers in Ohio, dating back to 1815, records provided by the Medina County Public Library indicate. While in Ohio, she had owned prize walnut trees.

"Throughout their lives, Mr. and Mrs. Mambourg placed great value in farming, food and the environment. Thanks to their generosity and foresight, the college will be able to offer a four-year scholarship to an incoming undergraduate student," Dean Bruce McPherson said. "For many years to come, this gift will significantly change the lives of young people who seek to better themselves through higher education."

For more information, or to support the Lloyd and Lorayne Mambourg Scholarship Fund, please contact the CFAES Development office at 614-292-0473, or visit online at cfaes.osu.edu/development. MATTHEW MARX



ATI student Jessica Coulter hopes to use her internship experience to learn critical skills for running her own business in the future.

OUTSTANDING

STUDENTS RECOGNIZED FOR LEADERSHIP, SERVICE

“Remember these faces—they will change the world.” That’s what Bruce McPherson, dean and vice president of agricultural administration, tweeted about the seniors recognized at the College of Food, Agricultural, and Environmental Sciences 2014 Recognition Program on April 17.

The class’s Outstanding Seniors are chosen based on the service, research and leadership they display in their undergraduate careers. Applicants, all of whom must have at least a 2.5 GPA, describe their participation in intra- and extracurricular activities, work and volunteer experiences, and research and outreach or engagement in their field. Applicants also write essays on the meaning of serving others through leadership, and finalists are interviewed by a faculty selection committee. **MARTHA FILIPIC**



This year's Outstanding Seniors, above, were recognized at a banquet on April 17. Elisha Mickle, at left, is the 2014 recipient of the ATI Director's Award.

THE COLLEGE'S 2014 OUTSTANDING SENIORS ARE:

- **Kristen Bartholomew**, *Animal Sciences, Oswego, New York*
- **Clair Bullock**, *Environmental Policy and Decision Making, Cincinnati*
- **Matheus DeNardo**, *Natural Resource Management, Wooster*
- **Sandra Molly DePue**, *Animal Sciences, Hamden*
- **Sarah Finney**, *Animal Sciences, Marshallville*
- **Amy Jo Frost**, *Agriscience Education, Bloomingburg*
- **Mara Gordon**, *Agribusiness and Applied Economics, Wellington*
- **Mike Hannewald**, *Sustainable Plant Systems, Waterville*
- **Kristy Klingenberg**, *Animal Sciences, Bremen*
- **Kelsey Koke**, *Animal Sciences, Powell*
- **Eric Leber**, *Agricultural Systems Management, Monroeville*
- **Danielle Matthews**, *Agribusiness and Applied Economics, Ohio City*
- **Amanda Prickett**, *Animal Sciences, Kingston*
- **Allison Pullin**, *Animal Sciences, South Charleston, West Virginia*
- **Ana Purgianto**, *Food Science and Technology, Jakarta, Indonesia*
- **Nick Rettig**, *Agribusiness and Applied Economics, Napoleon*
- **John Schoenhals**, *Plant Pathology, Archbold*
- **Lara Staples**, *Animal Sciences, Hamersville*
- **Stephanie Verhoff**, *Sustainable Plant Systems, Columbus Grove*
- **Katherine Wenner**, *Animal Sciences, Lewis Center*

Also recognized was the recipient of the 2014 Agricultural Technical Institute Director's Award, which honors the most distinguished Ohio State ATI student. ATI students are nominated for this award by a faculty member and the recipient is chosen based on ATI academic history, organizations and activities, work experience, leadership and awards, as well as leadership and recognition within the community and industry. The 2014 Director's Award went to:

- **Elisha Mickle**, *Landscapes Horticulture, Jeromesville*

FALLFEST WEEKEND TO WELCOME ALUMNI AND CELEBRATE STUDENT ACHIEVEMENT

Plans are set to welcome some 500 College of Food, Agricultural, and Environmental Sciences alumni and donors for an expanded Fallfest Homecoming Weekend Oct. 16–18.

This is the first year the college has aligned its Fall Scholarship Dinner with the Fallfest tailgate party and other homecoming-related activities.

Engaging alumni and showing donor impact are important for the college, which has awarded approximately

920 scholarships totaling nearly \$1.9 million to students for the 2014–15 academic year, said Pat Whittington, assistant dean, student development.

“We are very fortunate to have so many donors who have, over the years, helped to support our students and give students an opportunity for an education,” Whittington said.

“It’s a chance for CFAES alumni to come together and meet the students their gifts help support,” said Bill Smiley,

manager of Advancement Events, who is helping to coordinate the weekend. “It is a very rewarding experience for donors and alumni to be engaged with students, and it’s inspiring for others who want to be able to give back to the college and students in the future.

“Fallfest is a great time for people to gather, catch up, talk, and experience great food, games and entertainment.”

TRACY TURNER



CENTENNIAL CELEBRATION

DEPARTMENT OF FOOD, AGRICULTURAL AND BIOLOGICAL ENGINEERING

As Ohio State University Extension marks its centennial celebration this year, so too is the Department of Food, Agricultural and Biological Engineering.

The agricultural engineering department formed in 1914, splitting off from the Department of Agronomy.

“When we look at the future of the department, we see it’s never been as relevant as it is today,” said Scott Shearer, professor and chair.

Early on, the department benefited from diverse influences, Shearer said. Mary Parks Ives, the wife of 1920–24 department chair Frederick W. Ives, was a household equipment specialist for the Agricultural Engineering Company of Columbus. She was the first woman elected to membership of the American Society of Agricultural Engineers, according to a history of the department

written in 1970.

Today’s student body reflects an appreciation for such diversity, with women making up about 40 percent of the department’s engineering undergraduate and graduate programs, compared with about 20 percent of engineering students overall on campus, Shearer said.

The department plans an official centennial celebration this fall during homecoming weekend, Shearer said.

To support programs in the Department of Food, Agricultural and Biological Engineering, see go.osu.edu/givefabe. MARTHA FILIPIC

THE WEEKEND INCLUDES:

- **Oct. 16**—Fall Scholarship Dinner at the Ohio Union’s Archie Griffin Ballroom
- **Oct. 17**—State of the College Address from Bruce McPheron, vice president for agricultural administration and dean of CFAES; also planned are tours of the agriculture campus
- **Oct. 18**—CFAES Homecoming Fallfest Tailgate, including a special presentation to alumni marking their 50th anniversary of graduation and the Ohio State Buckeyes football game against Rutgers



DEPARTMENT ACHIEVEMENTS INCLUDE:

- **The creation of the slow-moving vehicle sign**, developed after department research in the 1950s found a significant number of fatal tractor accidents were related to slow-moving vehicles on highways.
- **Rubber tires on farm equipment.** In the 1930s, department researchers found rubber tires increased fuel efficiency, drawbar pull, operating speeds and operator comfort over commonly used steel wheels. By 1939, 85 percent of new tractors sold in the United States had rubber tires.
- **Subsurface drainage technologies.** The department, whose lobby area is home to the Ohio Drainage Hall of Fame, has been key in developing modern drainage techniques, including the development of corrugated plastic tubing to replace clay and concrete tile systems. That in turn has led to laser-beam automatic grade-control systems, tractor mounted drain-tube plows, and a new national standard for drainage installation and materials.
- **Conservation tillage, no-till and controlled traffic techniques.** Proper use of these techniques, fostered by numerous department faculty, increases yields and reduces erosion, compaction and fuel costs.
- **Novel food processing technologies.** In partnership with the Department of Food Science and Technology, FAFE faculty advance techniques including high-pressure processing, ohmic heating, aseptic packaging, pulsed electric field processing, and the use of gaseous sanitizers, such as ozone.
- **Development of biobased fuel and products.** Products developed by faculty include polyoils for urethane production as well as plant-based fibers to improve composite products, making them lighter-weight, lower-cost and less abrasive.



NEW PATHWAYS OPENING **STEM** DOORS

When most people think of careers related to science, technology, engineering and math (STEM), they assume they'll be dry, boring and difficult.

Not so, said Patty House, 4-H youth development educator.

"We are trying to expand the spectrum to show that STEM can be used in a lot of careers, and that people use STEM concepts all the time to understand the science of 'every day,'" House said.

To do so, House is leading Ohio State University Extension's STEM Pathways Signature Program. The team is developing STEM challenges to be used with 4-H clubs, schools, after-school programs, camps and special events throughout Ohio.

"Our goal is to infuse STEM Pathways in all of our delivery methods," House said.

Youths participating in the 30–60 minute challenges explore a problem and use the scientific method or engineering design process to come up with a solution. So far, the team has developed a dozen challenges on topics including animal behavior, diabetes, ergonomics, chemical spills, mining and bio-products, and is working with partners in the College of Engineering to develop more.

The challenges also include information on four STEM careers related to solving the issue.

"People think of STEM as difficult or boring, but we want them to understand that STEM is fun and exciting, and you can learn new things to help solve real world problems," House said.

To learn more about STEM Pathways and events planned, see ohio4h.org/STEM-Pathways.

STEM Pathways was named an OSU Extension Signature Program in July 2013. Other Signature Programs, which are designed to address broad, critical needs of the state, include:

- **Live Healthy Live Well**, to help consumers adopt nutrition, fitness and other wellness behaviors.
- **Energize Ohio**, which addresses critical energy issues affecting Ohioans.
- **Assuring Quality Care for Animals**, focused on teaching 4-H youth responsible animal care and handling.
- **Local Foods**, which supports local food production, marketing, nutrition and economic development.
- **Business Retention and Expansion**, which helps communities identify strategies to help local businesses remain profitable and expand.
- **Real Money Real World**, which simulates real-life experiences to help make youths aware of money management skills they'll need as adults. **MARTHA FILIPIC**

HELP PLAN EXTENSION'S FUTURE

Ohio State University Extension wants your guidance.

This year it celebrates the 100th anniversary of the Smith-Lever Act—the act that created Extension services across the country.

As part of that celebration, OSU Extension is taking a close look at itself to determine where it should focus for the next 100 years.



With more than 600 faculty and staff and 30,000 volunteers across the state, "Extension is one of Ohio's great resources, serving as the front door to the knowledge, expertise and resources of The Ohio State University," said Bruce McPheron, Ohio State's vice president for agricultural administration and dean of the College of Food, Agricultural, and Environmental Sciences.

To move Extension forward, McPheron is leading a process, asking questions about the long-term future of OSU Extension as well as the role the organization should play in shaping and positively impacting Ohio and Ohio residents.

He wants to hear from you—the college's supporters, alumni, donors and friends—as part of that process.

To participate in an online survey, go to go.osu.edu/Ohio2035.

THE KEY OBJECTIVES OF THE PROCESS INCLUDE:

- Describe the current position of OSU Extension.
- Develop and foster an organizational understanding and practice of "futuring."
- Identify the major forces, including industry and societal trends, that are driving change, as well as the potential impact these will have for Extension education in Ohio.
- Explore the major issues that Ohio communities and residents will face in the short- and long-term that OSU Extension can and should be in the position to help address.
- Identify and describe a compelling vision for the future of OSU Extension, with particular attention to societal trends and critical issues that will impact program priorities, delivery systems, financial models and staffing. **SUZANNE STEEL**

A SOLUTION TO LATEX ALLERGIES—AND A BUSINESS OPPORTUNITY

Health professionals prefer natural latex gloves over synthetic ones because they are stronger, provide more sensitivity, protect better from blood-borne pathogens, and cause less hand fatigue. However, they can cause allergic reactions in some people.

Answering this challenge, Katrina Cornish, Ohio State's Ohio Research Scholar and endowed chair in bioemergent materials at CFAES, has developed new, patent-pending, natural latex materials that are safe for both Type I and Type IV latex allergy sufferers.

The first material is made from guayule, a desert shrub that produces naturally Type I-hypoallergenic latex.

"Guayule latex is very resistant, soft, comfortable and less irritating than synthetic materials from which gloves are made," Cornish said.

To make this material also Type IV allergy-safe, Cornish and colleagues developed new kinds of "accelerators"—chemicals that are added to rubber to speed up the curing reactions and production of latex products, and whose residues cause this type of

allergy. The new accelerators don't leave residual chemicals on the gloves.

The other materials—Type IV hypoallergenic only—are made from standard Hevea (Brazilian rubber tree) high- and low-protein latexes, and processed with the same alternative accelerators developed in Cornish's lab.

A startup company—EnergyEne Inc., headquartered in Wooster and with Cornish as its CEO—has been established to lead the development and commercialization of products made from these latex materials.

The market for hypoallergenic latex materials is big. In addition to medical gloves, latex is the preferred source for a host of critical healthcare and consumer products, such as catheters, masks, dental dams, condoms and orthodontic rubber bands. MAURICIO ESPINOZA



LOCAL FOODS: MAKING PRODUCE SAFE FROM THE GROUND UP

Demand for fresh, locally grown fruits and vegetables has surged in recent years. But so have reports of foodborne illness related to fresh produce—from spinach and lettuce to cucumbers and cantaloupe.

But scientists with the College of Food, Agricultural, and Environmental Sciences are doing the legwork to help make Ohio's produce as safe as possible by conducting wide-ranging research and working with the people on the front lines: the growers.

"It wasn't too long ago that it wasn't widely recognized that fresh fruits

and vegetables were causing foodborne illness, so how could we stop it?" said Jeff LeJeune, head of the college's Food Animal Health Research Program and a key member of the college's Fruit and Vegetable Safety Team.

The team's scientists, LeJeune said, have been granted nearly \$10 million in recent years to examine questions including:

- Potential food-safety issues related to irrigation, manure application and wildlife intrusion onto farms.
- How the soil microbiome might be used to suppress foodborne pathogens.

- How to best manage food-borne illness-related pathogens in the greenhouse.
- What the food safety-related parameters should be for the use of horses on Amish farms. Amish farms provide a significant portion of Ohio's fresh produce.

"We work from the molecular level in the lab to actual field work on farms, and we work with growers from Ohio and around the world," LeJeune said.

In addition, the team has trained thousands of Ohio growers in Good Agricultural Practices (GAPs) sessions held throughout the state, providing information on basic food safety practices and how farms can begin developing a food safety plan. Lindsey Hoover, coordinator of the programs, said Giant Eagle has approached the team for the last

several years to provide annual training it requires of growers that supply the 218-store chain with fresh produce. "We focus on information growers will need to comply with in an audit, such as establishing a traceability program for their produce," Hoover said.

Chuck Kirchner, chief of the food safety division at the Ohio Department of Agriculture, has seen the team at work. He said its work, in partnership with ODA and other players such as the Ohio Farm Bureau, is an integral step to help prepare fresh-produce farmers for new on-farm regulations expected this year from the U.S. Food and Drug Administration.

"It's important for consumers that we provide the safest food possible," Kirchner said, "and that's what we're working towards as a group, farmers included." MARTHA FILIPIC



"It's important for consumers that we provide the safest food possible and that's what we're working towards as a group, farmers included." —CHUCK KIRCHNER



THE OHIO STATE UNIVERSITY

COLLEGE OF FOOD, AGRICULTURAL,
AND ENVIRONMENTAL SCIENCES

Continuum

Volume 6 » Issue 3

The Ohio State University Alumni Association, Inc.
College of Food, Agricultural, and Environmental Sciences
Alumni Society
100 Agricultural Administration Building
2120 Fyffe Road
Columbus, OH 43210-1010

ADDRESS SERVICE REQUESTED

NON-PROFIT ORG.
U.S. POSTAGE
PAID
COLUMBUS, OHIO
PERMIT NO. 711

VP's Corner

Bruce A. McPheron

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



@medflygenes

Greetings friends,

Another academic year has ended, and we've unleashed another generation of career-ready graduates ready to change the world. Their success is enabled by great teachers, world-class research, and scholarship support to reduce the cost of education.

Many of the programs that make our college such a powerhouse of teaching, outreach and research are supported by private philanthropy. Hundreds of individuals—connected to the college as alumni or through reliance on our research expertise, or, as the article on Mr. and Mrs. Winfough demonstrates, not very connected to us at all—provide substantial financial support for our use.

They support professors, they enable research into some of society's most complex problems, and they assist students through scholarships and funds to student organizations and activities. Each of these gifts, from a few hundred to many million dollars, has an impact. These individuals "pay it forward," and their generosity keeps your college moving forward. My thanks to all of you whose support has already made a difference.

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

Communications Offices

2021 Coffey Road
Columbus, OH 43210
614-292-2011

203 Research Services Building
Wooster, OH 44691
330-263-3780

Managing Editor: Martha Filipic
Content Editor: Suzanne Steel
Editor: Kim Wintringham

Contributing Writers: Mauricio Espinoza, Martha Filipic, Kurt Knebusch, Matthew Marx, Suzanne Steel, Tracy Turner

Graphic Designer: Kim Brown

Photographer: Ken Chamberlain

Continuum is produced three times a year by Ohio State University's College of Food, Agricultural, and Environmental Sciences. If you have questions or comments, write to: *Continuum*, 258 Kottman Hall, 2021 Coffey Road, Columbus, Ohio, 43210-1043 or filipic.3@osu.edu. For address changes, contact Denise Miller at 330-287-1234 or miller.2714@osu.edu.

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 and 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.