A center new to Ohio State focuses on improving food safety, preventing foodborne illnesses

At The Ohio State University, a food safety center new to CFAES provides a centralized location for food safety resources and further establishes the university as a global leader in food safety.

The Center for Foodborne Illness Research and Prevention (CFI) brings its 13-year record of protecting public health to CFAES.

Founded as a nonprofit organization in December 2006, CFI’s mission is to advance a more scientific, risk-based food safety system that prevents foodborne illnesses and protects public health by translating science into policy and practice, said Barbara Kowalcyk, a CFAES assistant professor of food science and technology and an internationally recognized food safety expert.

“Access to affordable, safe, and nutritious food is increasingly critical in order to sustain the world’s growing population,” said Kowalcyk, who co-founded CFI and is the center’s director. “The establishment of CFI at Ohio State builds on the university’s extensive, existing efforts to address this critical challenge.”

This is significant, considering the World Health Organization estimates that 600 million illnesses and 420,000 deaths are caused annually by 31 foodborne hazards worldwide. In the United States, serious foodborne bacteria, viruses, and fungi cause an estimated 48 million illnesses, 128,000 hospitalizations, and 3,000 deaths annually, causing $77.7 billion in medical costs and lost productivity.

“CFI has earned a reputation as a leader in improving food safety policies and practices through science-based approaches,” Kowalcyk said. “As a strong participant in national food safety coalitions, CFI has helped secure or improve food protections for American consumers.”

Among its contributions, the center collaborated with other groups to develop, pass, and implement the Food Safety Modernization Act of 2010 (FSMA), which was the first major overhaul of food safety oversight at the U.S. Food and Drug Administration in more than 70 years. FSMA shifts the focus from responding to foodborne illnesses to preventing them.

The center also joined multiple efforts to strengthen government resources for national and state food safety programs, and it led an effort to require mandatory labeling of mechanically tenderized beef products, which have been associated with foodborne illnesses, Kowalcyk said.

The center is housed within the CFAES Department of Food Science and Technology (FST).

“It is a perfect fit for the work the department does, considering FST’s strong history of impacting food safety challenges at the local, national, and international level,” said Sheryl Barringer, department chair.
Chances are you’ve been noticing more Ohio-grown produce at your grocer, and not just in the summer, but in the dead of winter.

**BIG GROWTH**

Ohio’s greenhouse industry is booming, said Chieri Kubota, professor of controlled environment agriculture in the CFAES Department of Horticulture and Crop Science. With excellent access to water, interstates, and consumers, plus a long history in greenhouse production, Ohio has recently attracted expansions by major companies.

Ohio’s greenhouse tomato acreage alone rose by five times in five years, Kubota said, based on the 2017 Census of Agriculture.

Ohio’s other greenhouse crops include cucumbers, peppers, and lettuce, to name a few—all of which, thanks to their greenhouses, are able to thrive in the state year-round.

**HYDROPONICS**

Almost all of Ohio’s commercial greenhouse veggies, Kubota noted, are produced by hydroponics. Crops grow either in trays floating in nutrient-rich water or rooted in soil-less media. Among its benefits, hydroponics conserves water and limits nutrient loss.

**CFAES SCIENTISTS**

CFAES, as part of its land-grant mission, supports cutting-edge greenhouse experts and facilities. Recent new studies, for example, are optimizing climate conditions and nutrient solutions used for growing leafy greens.

CFAES scientists host a Greenhouse Management Workshop every year—a chance for growers to learn the latest findings—and have done so since 1999. The next one is Jan. 16–17, 2020, in Wooster.

The new, state-of-the-art Controlled Environment Food Production Research Complex is planned for CFAES’ Waterman Agricultural and Natural Resources Laboratory in Columbus.

Together, especially when it comes to hydroponics, Kubota said, “no other land-grant university in the U.S. has this complete set of expertise.”

**CFAES-TRAINED GRADS FILLING JOBS**

Students graduating with greenhouse-related degrees are in big demand, Kubota said. Nationally, including in Ohio, “there are tons of (greenhouse-related) jobs available,” she said.

In Columbus, CFAES majors related to greenhouse production include plant health management; plant pathology; entomology; sustainable plant systems; and food, agricultural, and biological engineering (go.osu.edu/Baj5).

In Wooster, at Ohio State ATI, CFAES’ two-year degree-granting unit, greenhouse-related two-year majors include horticultural science, agricultural systems management, and greenhouse and nursery management (go.osu.edu/Baj7).

Kubota said her own lab (u.osu.edu/cepptlab) trains graduate students in both the science and technology of greenhouse production.

“There is no problem for them getting a job,” she said.

**FRESHER, LOCAL PRODUCE**

Kubota said lately she’s been seeing packaged, Ohio-grown spring mix salads in her supermarket.

“It’s a pleasure to find that,” she said. “I’m so glad stores are carrying more produce from local growers. There’s such an obvious difference in freshness and quality.”
This milestone arrives at a remarkable moment of opportunity for the university and the college’s alumni, students, faculty, staff, partners, and entire Ohio community as we come together as one.

Time and Change: The Ohio State Campaign, the university’s historic comprehensive fundraising campaign that launched during homecoming week in October, coincides with the beginning of celebrations for the 150th anniversary for both the university and the college.

For its part, CFAES has a goal of raising $225 million in private support focusing on new campaign funds created to embody the following priorities.

- **Workforce development**: Through innovative educational opportunities and a complete portfolio of programs, CFAES will be the preferred provider of workforce development surrounding food, agricultural, and environmental systems. **The CFAES Workforce Development Fund (#316752)** supports initiatives and staffing needs in areas centered around K–12 education through Ohio 4-H youth development, preparing CFAES’ enrolled students to grow into future leaders, updating current industry personnel with recertification and advisory programs, and offering outreach services to the public through OSU Extension.

- **Translating research**: CFAES will bridge research to advance scientific discovery, understanding, and practical application to engage its many stakeholders. **The CFAES Translating Research Fund (#316753)** helps provide staff and resources for undertaking research projects in agriculture, food production, and environmental sustainability, and sharing relevant findings relatable to industry and the general public.

- **Waterman Agricultural and Natural Resources Laboratory**: A 261-acre core for teaching, research, and community engagement, Waterman Lab is located on the Columbus campus. Capital investments at Waterman will include a modernized dairy farm and three new cutting-edge facilities, one of which, the Kunz-Brundige Franklin County Extension Building, has already opened. That will be followed by the Controlled Environment Food Production Research Complex and a multispecies animal learning center. **The Waterman Facilities Fund (#316494)** supports capital investment at Waterman, including but not limited to design, construction, maintenance, and/or renovations.

These themes align with Ohio State’s strategic planning efforts and address four grand challenges as identified by CFAES. The challenges represent some of the world’s most significant issues: sustainability; one health—the integration of human, animal, and environmental health; the rural-urban interface; and preparing the next generation of scientists and leaders.

With your support, a successful campaign will enable us to achieve our potential for the public good and continue the land-grant mission to disseminate knowledge and education to our communities for the next 150 years.

To learn how to donate or get involved, visit go.osu.edu/CFAEScampaignthemes or contact Emily Winnenberg Kruse at 614-247-7606 or kruse.192@osu.edu.
Feeding birds during the winter months

Just as you need to consider diet preferences of winter guests to your home, consider what your backyard guests might want as well. Here are four of the most common backyard winter birds in Ohio, and the best food to entice them besides black oil or hulled sunflower seeds, which all four eat, according to CFAES wildlife specialist Marne Titchenell.

NORTHERN CARDINAL:
peanut hearts, millet, and milo

DARK-EYED JUNCO:
safflower, thistle seed, peanut hearts, and millet

BLUE JAY:
safflower, thistle seed, peanut hearts, millet, fruit, and suet

AMERICAN GOLDFINCH:
thistle seed

Buy a poinsettia, grow a Buckeye

Buy a poinsettia at one of CFAES’ two upcoming sales, and you’ll brighten both your home and some students’ lives as Buckeyes.

The Columbus campus sale, Dec. 4–5, benefits the CFAES chapter of Pi Alpha Xi, the national honor society for horticulture students.

The Wooster campus sale, Dec. 6–7, supports greenhouse and floriculture students at CFAES’ Ohio State ATI. The students grow and display the poinsettias as part of their hands-on coursework.

“The students enjoy interacting with customers and hearing their positive responses,” said Terry Lanker, chair of Ohio State ATI’s Horticultural Technologies Division.

Watch for details at facebook.com/ PAXOSU and ati.osu.edu, or call 614-688-3479 (Columbus sale) or 330-287-1243 (Wooster sale).

#LeanOnYourLandGrant

There might be time left to plant a cover crop on fields unplanted due to adverse weather this growing season, said Extension educator Alan Sundermeier.

Depending on weather, cereal rye or wheat can be planted in late fall, he said, noting that “bare soil is not only subject to erosion, but the microbes in the soil can go dormant or die if there are no living roots in it.”

CFAES’ Rural and Farm Stress Task Force (go.osu.edu/agcrisis) assists Ohio producers dealing with a challenging growing season due to weather impacts, tariffs, and low commodity prices. Whether it’s navigating new tax laws or understanding the U.S. trade policy’s impact on agriculture, we encourage you to #LeanOnYourLandGrant.

Wine workshop

With interest growing in Ohio wine production, The Ohio State University South Centers is offering “Grape and Wine Analysis,” a workshop on Dec. 19 for established growers, wine makers, and those interested in getting started in Ohio’s $1.3 billion wine industry.

Attendees will learn proven grape-growing techniques, acquire basic tools to successfully manage a vineyard, and learn how to get started in the wine business. The program is from 9:30 a.m. to 3:30 p.m. and will touch on vineyard soil and tissue analysis, wine balance assessment, sulfur dioxide management in the cellar, new and existing varieties for quality wine production, and essential issues in fermentation management.

Registration is $25 by Dec. 14 and includes lunch. Register at 740-289-2071, ext. 115, or email sherman.1473@osu.edu. The workshop is at the South Centers’ Endeavor Center, 1862 Shyville Road, in Piketon.