

Ohio State University Combined Research and Extension Plan of Work 2021-2025

Status: NIFA Review

I. Plan Overview

1. Executive Summary

The Ohio Agricultural Research and Development Center (OARDC) and OSU Extension are critical components of the College of Food, Agricultural and Environmental Sciences (CFAES) at The Ohio State University, serving the mission of teaching, research, and extension. Ohio State is continually working to be one of the leading public research universities in the nation. Stated in the university's strategic plan, Ohio State has three core values:

A focus on access, affordability and excellence to lower the cost and improve the value of an Ohio State education.
A commitment to community engagement to extend higher education and our research — elevating the quality of life for Ohio and beyond.

The recognition of diversity and inclusion as core principles in everything we do, from academic programming and resources to the hiring and promotion of faculty and staff.

In order to maximize our impact, Ohio State is constantly looking for ways to better integrate our resources across the university. This means improving cross-campus collaborations, while increasing inter- and trans-disciplinary research and programming. CFAES plays a vital role, specifically by translating cutting edge research into impactful knowledge for our stakeholders across the state. CFAES has incorporated the mantra “We sustain life” to reflect the importance of our mission.

Increasing collaborations between OSU Extension and the broader university allow for more impactful programming for our stakeholders. This additionally broadens the expertise of our Extension professionals and their ability to quickly respond to critical issues across the state.

While our clientele base continues to grow and change, our research and programming areas must evolve as well. By leveraging our existing resources, we become well-positioned to increase the scope of our work and capture additional funding to better serve our stakeholders.

CFAES is updating our strategic plan to ensure that we are having the greatest impact for our investment. As a college, we wish to make strategic planning more of an alignment process that will improve and transform how we meet our mission. Focusing on our mission will build alignment within CFAES and across Ohio State, strengthening both internal and external partnerships rooted in our core land-grant principles. The updated college strategic plan is scheduled to go public in the fall of 2020.

Along with this strategic alignment, our college has and will continue to refocus leadership of departments and units to reduce duplicative efforts and free up resources to address our more critical needs.

CFAES will also continue to refresh its infrastructure to ensure that our facilities are cutting edge and able to keep up with changing technology. The CFAES Facility Master Plan is our guiding document for future facility investments, ensuring that our investments are both strategic and make sense to support our mission areas. For example, one of the largest facilities investments currently in progress is at the Waterman Agricultural and Natural Resources Laboratory in Columbus, OH. This includes a \$35M Controlled Environment Food Production Research facility, a \$5.4M Multispecies Animal Learning Center, and a \$5.5M Extension Building. This facility is expected to be a hub for teaching, research, and community engagement around food, health, agricultural production and sustainability.

As we focus our resources, we will continue to build upon our college's four Grand Challenges:

Sustaining Life - A simultaneous focus on viable agricultural production, food security and safety, and environmental and ecosystem sustainability.

One Health - The intersection or interaction of human, animal, plant, and environmental health.

Rural-Urban Interface - Exploration of the tensions and opportunities created in the communities, industries, policies, economies, and communications between rural and urban residents.

Leadership - Preparation of the next generation of scientists and leaders.

The critical issues we identify in this plan directly relate to the four grand challenges identified here.

One topic area of particular interest includes water quality, which is of the utmost importance to Ohioans. Ohio's water resources provide a wide range of important services, including drinking water and irrigation, power, fisheries, scenic value and recreation, and ecosystem functions. Changes in population, land use, and climate have increased stress on water quality with large effects on environmental condition and human health. For example, the frequency and severity of harmful algal blooms (HABs) in Lake Erie and the Ohio River have resulted in losses of water supply and impact fishing and recreation in recent years. Sustaining and improving water quality is vital to Ohio's quality of life, economy, and environment. Over the next several years, this will continue to be a priority topic area for our research and Extension programming. CFAES recently hired a Water Quality Initiative Director who is responsible for leveraging partnerships and resources across the university and the state.

Another high priority issue to be addressed over the planning period is prescription drug abuse and opioid addiction. CFAES expects to play a role in combating the opioid epidemic in Ohio. Ohio has consistently been among the top 5 states in the nation for drug overdoses per capita. Ohio State is uniquely positioned to respond to such issues, as OSU Extension field experts can respond to crises quickly. Many Extension educators are involved in local coalitions and task forces that are actively providing drug use and abuse education, resources for those in addiction recovery, and evolving ways to treat family issues caused by addiction. Ohio State will continue to invest in and collaborate with various partners across the state to address this issue.

2. FTE Estimates

| Year | 1862 Extension | 1862 Research |
|------|----------------|---------------|
| 2021 | 570.0 | 216.0 |
| 2022 | 570.0 | 216.0 |
| 2023 | 570.0 | 216.0 |
| 2024 | 570.0 | 216.0 |
| 2025 | 570.0 | 216.0 |

II. Merit / Peer Review Process

CFAES places a great deal of importance on internal and external reviews, which is emphasized by our dedication to having these reviews conducted routinely at the department and college level. Once a review is completed, it is imperative that the findings for that review are documented, shared, and incorporated into current and future planning, otherwise we risk sliding backwards, losing the progress we have made.

All CFAES departments, schools, units, and centers must submit annual reports to the college which include information pertaining to undergraduate and graduate student enrollment, faculty productivity, research, outreach, and engagement. These reports also include an annual plan which is used to assist with resource allocation across the college.

Certain funding decisions, such as those for SEEDS: The CFAES Research Competitive Grants Program, are determined by a competitive application process and research panel that reviews applications for funding. For example, the SEEDS

program itself undergoes changes annually in response to comments from applicants, panel members, and the wider community. Feedback gathered in the past year (based on a recent survey, stakeholder focus groups, etc.) suggests that we could be utilizing the program in a different way to achieve our goals. Thus, we are exploring options for what the program could look like in the future. CFAES is piloting an Emerging Needs grants program. The new program provides funding for areas of research that directly support CFAES stakeholders and for which current external funding is limited or not yet available. The program will also consider funding projects that allow faculty to learn or develop new techniques or approaches that will position CFAES to better serve stakeholders or make faculty more competitive for future funding opportunities.

The FY 2020 objectives of the program will focus new and applied research in direct support of addressing critical issues affecting one or more commercial agricultural products important for Ohio and for which external funding is not readily available or adequate to support CFAES stakeholders. Preference will be given to projects that:

Identify solutions to problems that can be directly and immediately implemented by producers
Represent commercial agricultural products for which no or limited funding opportunities exist

OSU Extension has recently completed an external review of the 4-H Youth Development and Community Development programs to evaluate the status and effectiveness, and to identify future direction and priorities. OSU Extension is currently in the process of conducting external reviews of the Agriculture and Natural Resources and Family and Consumer Sciences programs with anticipated completion in late 2020. The purpose of a program review is to guide program development on a continual basis. A program review is a process that evaluates the status, effectiveness, and progress of programs and helps identify future direction and priorities. Program reviews are a standard practice in youth development programs (Roth & Brooks-Gunn, 2016) and higher education (Halonen & Dunn, 2017).

III. Stakeholder Input

1. Actions to Seek

Agriculture is the largest industry in the state of Ohio, contributing roughly \$105 billion to the economy each year. As such, it is important that our research and Extension programming directly reflects the importance of agriculture to our stakeholders. CFAES consistently has wide support and active participation from our stakeholders. We will continue to use formal and informal methods to engage our stakeholders and encourage their participation throughout this planning period. Our land-grant identity is defined by translational and responsive research, which means that we are constantly looking for feedback and working to improve the service to our stakeholders.

Advisory committees are also used to identify new stakeholders. For example, county Extension advisory committee members help in connecting to our traditional stakeholders and expanding the list of county officials that should be contacted. We also use external advisory committees and stakeholder groups to discuss current programs and gather input for future direction and planning. Electronic messaging, social media, webinars, and blogging, as well as interactive group messaging systems have continued to expand rapidly, allowing more stakeholders to participate using communication technologies. We also use media advertising to promote opportunities for our stakeholders to provide input.

OSU Extension will expand on the major activity completed in 2018 to collect stakeholder input, which was a county-based statewide needs assessment survey. For the 2018 statewide needs assessment, 9,600 surveys (42% response rate) were distributed to individuals from all 88 Ohio counties who represented groups of OSU Extension stakeholders and OSU Extension users (e.g., Advisory committee members, volunteers, newsletter recipients, etc.). Each county office received a unique report detailing the highest priority needs for their county and the results from all 88 counties were aggregated into a statewide needs assessment report, which will help to guide our programming. The next step will be to reach out and solicit input from Ohio citizens who may not be current customers/users of OSU Extension.

2. Methods to Identify

CFAES will continue to make targeted efforts to communicate with all stakeholder groups. CFAES faculty and staff members, departments and schools, and various research and Extension groups within the institution use stakeholder lists that serve as their foundational contact points. Federal, state, regional, and local governments; agencies; advisory committees; commodity groups; and special interest groups add to the list of stakeholders from whom we seek input in the initial planning and execution phases of our programs.

Opportunities such as the CFAES Farm Science Review (FSR) will continue to engage and garner stakeholder participation, feedback and support. FSR - Ohio's premiere agricultural event - is one of the largest in the nation of its kind and is dedicated to demonstrating the best agricultural research and management practices with ready-access for our stakeholders. Each year at the FSR there is a "Celebration of Ohio Agriculture" luncheon which brings together both internal and external stakeholders to celebrate our accomplishments. Events such as this also provide a means to expand our clientele list, knowledge of needs, and feedback on impacts and outputs. These contacts are logged and maintained.

Our researchers and Extension educators are encouraged to reach out to new and underserved target audiences as well as traditional and non-traditional stakeholders. Some activities and events that provide informal opportunities to engage with current and potential stakeholders include participation in County Commissioner Association of Ohio budget information dissemination meetings, informational booths at county fairs, participation in conferences and meetings such as the fair manager conference, multiple opioid summits, town hall meetings, and other community events. In addition, OSU Extension educators in every county gather relevant input from the multiple teams and committees that work to improve local conditions.

3. Methods to Collect

CFAES uses multiple methods to collect stakeholder feedback, including but not limited to in person and online surveys, interviews, advisory groups, public comment periods, and targeted invitations to various stakeholder groups. We will continue to reach our traditional stakeholders through tried and true methods, as well as look for new ways to engage non-traditional groups. Our survey of these groups is typically via open forum interviews or discussions that generate more qualitative data than quantitative. Surveys are routinely sent to our constituents (general and targeted groups) to inform our programming. We also reach out via public media to advertise general public events and stakeholders are often invited to participate on CFAES hosted panels, provide presentations, or offer input on processes and planning.

Advisory committees are used at various levels within the College. For example, the CFAES Research Advisory Committee was created in 2018 to address recommendations from an external review performed by the National Council of University Research Administrators in 2016. This group is comprised of several faculty and staff members (both internal and external to the college) who are involved with research. It currently provides input on the existing research enterprise at the college and ideas for future changes.

Our OSU Extension advisory committees have guidelines that dictate how they should be composed. The membership of committees is reviewed during annual onsite audits and self-study diversity reviews are performed to ensure that involvement is sought from the broadest array of constituents feasible.

OSU Extension also performs routine community needs and health assessments to determine priority issues for our stakeholders. Recently, OSU Extension performed a needs assessment for agriculture and natural resources, which includes in depth interviews of stakeholders to determine future focus areas. Sixty counties submitted data, which was combined into the county needs assessment identifying four areas, in order of importance: economic and risk management for operations and resources; production and best management practices; pest management; and community issues such as farm stress, rural development, and public perception of agriculture. Other assessments will be performed during this planning period.

4. How Considered

As a land-grant institution, it is important that our stakeholders directly inform decisions that are being made about the future of the college. To maximize the influence of stakeholder feedback, we actively engage groups at the beginning of the process, thus providing formative reviews. Stakeholders may be internal to the organization, or from outside groups such as industry, other educational institutions, governmental groups, etc.

Stakeholder input is considered widely across the organization. For example, OSU Extension implements several levels of advisory committees, tasked with identifying and prioritizing needs, connecting Extension with potential partners or those who could fill gaps in service, educating stakeholders on OSU Extension's impacts, and advocating for OSU Extension. In addition to state-level, county-level, and program area advisory committees, we also use local and/or topical committees such as the goat committee, research advisory committee, and various others.

Most emerging issues are identified in the field, as issues often manifest themselves in our clients' daily work and social

lives. Needs and issues originating from producers, processors, manufacturers, consumers, and special interest groups will continue to inform our programs. This approach influences hiring, shifts in priorities, and resource allocations for both budgeting and strategic planning.

IV. Critical Issues

1 Health and Wellness

Description:

Ohioans should have a positive state of mental and physical health, which includes the prevention of disease, by creating and supporting healthy environments in homes, schools, workplaces, and communities. Ohio State will achieve this goal through a focus on topics that include disease prevention, safety research and education, social and emotional health, and stress reduction. Research and Extension efforts are anticipated to lead to positive behavior change, enabling people to achieve and manage positive personal and community health and wellness outcomes.

Term: Long

Science Emphasis Areas

Education and Multicultural Alliances
Family & Consumer Sciences
Food Safety
Human Nutrition
Sustainable Agricultural Production Systems
Youth Development

2 Economic Vitality

Description:

It is important that all Ohioans have the capacity to pursue and sustain economic well-being. Ohioans should be able to enjoy financial security today, save enough resources for the future, and successfully navigate fiscal challenges and opportunities as they arise. Through money management education, individuals, families, business managers, and community leaders will improve their financial literacy, decision making, and ability to manage resources. Research in this area focuses on understanding how complex economic factors may impact our stakeholders and developing tools that stakeholders can use to improve their operations. This critical issue also includes research and outreach related to local, national, and international policy impacts.

Term: Long

Science Emphasis Areas

Bioeconomy, Bioenergy, and Bioproducts
Education and Multicultural Alliances
Environmental Systems
Family & Consumer Sciences
Sustainable Agricultural Production Systems
Youth Development

3 Food Security and Production

Description:

A sustainable food system not only benefits producers and protects consumers, but also ensures a safe food supply while feeding a growing population. Ohio State conducts research and educates producers about best practices that increase yield and profitability. In addition, changing consumer preferences continually influence production practices and the types of products that producers are expected to bring to market. Using science-based information, Ohio State helps consumers, producers, and policy makers become more informed about decisions related to food and the way it is produced, processed, distributed, stored, prepared, and consumed.

Engaging citizens in conversations about their food creates a holistic approach to solving food security issues. Additionally, teaching citizens to grow some of their own food can help improve food quality, eliminate food deserts, and increase community food security.

Term: Long

Science Emphasis Areas

Education and Multicultural Alliances
Food Safety
Sustainable Agricultural Production Systems
Youth Development

4 Environmental Quality and Sustainability

Description:

Ohio State environmental experts educate Ohioans about their individual impact in a global community, while teaching them to be good stewards of the planet. Ohio State research-based programs help people make more informed choices about how they can promote and sustain environmental quality. Programs focused on nutrient management, air quality, forestry, farming practices, water quality, and landscapes engage and encourage both urban and rural audiences to preserve natural resources for future generations. Our researchers are also constantly looking for new ways to reduce waste and improve the efficiency of sustainably developed products.

Term: Long

Science Emphasis Areas

Agroclimate Science
Bioeconomy, Bioenergy, and Bioproducts
Education and Multicultural Alliances
Environmental Systems
Sustainable Agricultural Production Systems
Youth Development

5 Thriving Across the Lifespan

Description:

From infancy into later life, Ohio State is committed to helping Ohioans thrive. We develop and strengthen the skills of current and future leaders to address today's most pressing issues. Our research and Extension mission areas partner to leverage research-based knowledge and best practices to strengthen individuals and the various social structures in which they live. As our society and family structures change, the ways in which we reach and empower clientele will evolve, so it is important that we are finding new ways to reach these audiences—from court-mandated programming to online learning communities. Person-centered engagement also advances the body of research knowledge and individualized instruction practices. Another key focus of our efforts is positive youth development, delivered primarily through 4-H. Our goals are to empower youth, families, and communities to develop and expand characteristics, knowledge, and skills that create a strong foundation for a positive adulthood, including career and college readiness.

Term: Long

Science Emphasis Areas

Education and Multicultural Alliances
Family & Consumer Sciences
Youth Development