

CFAES Testimony – March 23, 2021

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Good afternoon Chairman Schaffer, Vice Chairman Huffman, Ranking Member Fedor and members of the Senate Ag Committee, thank you for the opportunity to testify today. I am Dean Cathann Kress and I represent the 402 faculty, 1405 staff, nearly 3500 students, 50,000 living alumni, 47,000 animals, 88 counties, and 11,000 acres that make up the College of Food, Agricultural, and Environmental Sciences at The Ohio State University. We are one college – with three campuses (Columbus, CFAES Wooster, and State-wide; with our faculty/staff split evenly among the three) and three missions (Research, Teaching, Extension) all dedicated to one essential purpose: We sustain life.

For some, our field of study likely seems old – after all, as the cornerstone college we just celebrated our sesquicentennial – 150 years. People have gotten used to our college, and our industry’s success after that many years and often take it for granted.

One of my jobs as your dean, is to remind everyone that what we do is not only essential for our industry, not only essential for Ohio, but essential for the human species and our world.

It’s not often that we stop our busy lives and consider what makes it possible to do work of any kind. It takes energy. And really, for our planet, almost all energy can be traced back to one important source – our sun. For over 12,000 years – agriculture has effectively and sustainably harnessed that energy and converted it to the food, fiber, and fuel humans use to thrive.

CFAES is both literally the cornerstone college of our university – which began as Ohio A&M – and the cornerstone of sustaining human life on earth because of our disciplines.

With mission areas of teaching, research, and extension, our college is uniquely positioned to lead nationally and globally. Our college includes departments supporting a breadth of work around food and food systems, a wide range of production, environmental and ecosystem sustainability, policy and economics, and health. Our college is the only one at Ohio State with its own second campus in Wooster which features our two-year technical institute, ATI, as well as significant research facilities. Our college is also in your communities- through our OSU Extension and 4-H programs in all 88 counties and our research stations and farms throughout the state.

Within CFAES, we focus on simultaneously ensuring viable agriculture production, food security and safety, and environmental and ecosystem sustainability. Some of the ways we do that include our focus on challenges in these key areas:

- One health — the intersection and interaction among human, animal, and environmental health.
- Rural-urban interface — exploring the tensions and opportunities in the communities, industries, policies, economies, and communications between rural and urban residents.



THE OHIO STATE UNIVERSITY

COLLEGE OF FOOD, AGRICULTURAL,
AND ENVIRONMENTAL SCIENCES

- Leadership — preparing the next generation of scientists and leaders.

The potential for our college and our work is unlimited. Each of these challenges, encourages interdisciplinary work and provides compelling wicked problems which must be addressed for our species to survive.

Our CFAES Knowledge Exchange works with our Ohio State University Extension professionals to translate research into materials, videos and fact sheets and relay the knowledge to advance our state's strength in production agricultures, advance science, advance industry, and advance the knowledge of Ohioans and beyond. Simply put, we think science isn't done until it's communicated.

Our OSU Extension professionals also work directly in our local communities. No matter which county you visit, you can find people who are helped by the four major OSU Extension program areas: family and consumer sciences, 4-H youth development, community development, and agriculture and natural resources. These program areas – and many other special topics – are continuously being evaluated and updated to meet the changing needs and issues facing each community.

Our innovative scholarship is focused on our Grand Challenges but reaches across broad complex systems – like the plants and insects focused on in our new Science Building – but also engineered systems like Precision Agriculture – where machinery automation and use of spatial data improve the farm business and in-season decisions by utilizing technology or automated components to more accurately place and meet site-specific crop and soil needs – to those focused on our environment and natural resources like Carbon Sequestration and methods to sequester carbon dioxide in the soil in the CFAES Rattan Lal Center for Carbon Management and Sequestration. We span food and biochemical systems such as in the work of our Center for Foodborne Illness Research and Prevention to address national and international foodborne illnesses and to ensure that the global food supply is both safe and healthy.

Or the work being done in our department of Food, Agricultural and Biological Engineering with drones and the ability to identify weed species with drone imagery and then be able to make the necessary herbicide applications. They are also completing research with autonomous equipment with large equipment lines and researching field compactions issues, looking at tire ballast and tracks.

Our OSU eFields program is dedicated to advancing production agriculture through field-scale research. This program utilizes modern technologies and information to conduct on-farm studies with an educational and demonstration component used to help farmers and their advisors understand how new practices and techniques can improve farm efficiency and profitability.

The 2020 eFields Report has over 218 trials, 107 partner farms, 55 industry partners, and 65 Ohio State contributors. The program is dedicated to delivering timely and relevant, data-driven, actionable information. Current projects are focused on precision nutrient management strategies and technologies to improve efficiency of fertilizer placement, enable on-farm evaluation, automate machine functionality, enhance placement of pesticides and seed, and to develop analytical tools for digital agriculture.

For those of us in CFAES – we think there are many things besides being a land grant that make us unique.

Our partnerships with industry leaders, our comprehensiveness within a leading Land Grant University which allows us to work alongside our medical complex and engineering researchers among others – and our commitment to engage across disciplines creates the conditions for the next land-grant revolution. For example, we think it's just as likely that cancer will be prevented by a food scientist working jointly with medical researchers – or that water quality issues will be solved by a soil scientist and an engineer – and at Ohio State, we can do that.

The complex interactions between Animals and Human systems became more obvious to us in the year of Covid-19. The Food Animal Health Research Program (FAHRP) located on the CFAES Wooster campus changed into the Center for Food Animal Health (CFAH) within the College of Food, Agricultural, and Environmental Sciences (CFAES). Research in the Department of Animal Sciences aims to increase the economic profitability of agricultural animals and quality of their products, improve animal welfare, and lessen the environmental impact of animal systems. The Center for Food Animal Health is recognized as a global leader in using One Health approaches to solve critical and emerging problems associated with production limiting diseases of food animals, pathogens transmissible between animals and people (zoonoses), and food safety. Furthermore, the recent Discovery Themes Initiatives, including the Infectious Disease Institute (IDI), and existing expertise in the Department of Animal Sciences will place the Center for Food Animal Health at the forefront of food animal disease research and provide increased opportunities for growth and expansion in interdisciplinary research, teaching and outreach in this area. To that end, and to address the needs of Ohio's commercial livestock industry, we are planning two additional veterinarian positions in swine and poultry within the Center, who will serve all of Ohio and be very active with independent and integrated operations.

We are also addressing food security and food safety. Last spring the CFAES Lean on Your Land Grant Food Supply Chain Task Force was convened to address issues in our food system that have been created or exacerbated by the COVID-19 pandemic. The task force consists of 80 faculty and staff across all 12 CFAES departments. We developed a partnership with the Ohio Emergency Management Agency to support their work engaging state-level agencies involved in Ohio's food provision and production system during the COVID-19 crisis. This in addition to using surveys, research subgroups, and OSU Extension experts to identify issues in meat; specialty crops; direct marketing; food systems data and modeling; and youth, family, and community.

In addition to the task force, we worked with meat processors to manage the influx of livestock requests; the stresses employees were enduring that then led to labor issues; food safety; customer challenges; and the marketing of retail meat products. Additionally, led by Dr. Lyda Garcia – OSU Extension meat specialists published facts sheets to answer common consumer questions about COVID-19 and food safety, on-farm food animal processing, and the importance of buying local.

During this past year, the Wooster campus was officially renamed from "OARDC/ATI" to CFAES Wooster to better reflect its role within CFAES and its status as a campus with robust research, graduate education, and undergraduate programs.

Changing the name connects this campus with our shared resources, infrastructure, personnel, and equipment. We will continue to use OARDC and ATI to designate the research enterprise statewide and our CFAES technical institute, but this new name brands the location as an integral part of CFAES and provides a gateway for Ohio State in northeast Ohio.

Thanks to your support, we completed our amazing new CFAES Wooster Campus Science building which houses four state-of-the-art entomology research labs, as well as two undergraduate chemistry teaching classrooms to enhance education for ATI students and engage them with research being conducted. The Department of Entomology's Bug Zoo also occupies the first floor in a space that showcases the collection for visitors, including school tours and community outreach. From cutting-edge research and state-of-the-art teaching labs, to the new Bug Zoo, this building is connecting our faculty, students, and community.

Within this building – ATI will prepare students for meaningful careers. With small classes, unique hand-on curriculum and enrichment opportunities outside the classroom, ATI students will be well-prepared for additional education, jumping into the workforce, preparing to start their own business or getting back to the family farm.

I'm deeply proud of our CFAES community and how we have managed and responded during 2020. CFAES was one of the first colleges to gain approval for research exemptions under Governor Mike DeWine's "stay at home order". With this approval, CFAES researchers worked with The Ohio State University Wexner Medical Center physicians on COVID-19 antibody blood tests; and tested polymer face masks to protect against COVID-19 and kept our field and lab research efforts going.

We have also begun planning for our Farm Management and Ag Policy Center which will:

- Bridge research, extension, and teaching
- Focus on Agricultural Marketing, Finance, Production, Risk Management, Policy, and Human Resources

When it comes to water quality, we are conducting interdisciplinary research which links field studies, watershed models, and socio-economic analyses with stakeholder groups to investigate connections between downstream water quality and management practices in upstream watersheds.

Thanks to a \$5M USDA project we are working to establish a Public-Private Partnership with crop consultants and farmers, to identify fields with elevated nutrient levels where management practices will be installed and monitored in an effort to reduce nutrient runoff.

We also hired six water quality associates to work in northwest Ohio. Each of the new associates serves three to five counties and together, they are part of a new effort by the CFAES Water Quality Initiative (WQI) to learn more about and boost soil health, improve Lake Erie's water quality, and keep the region's farms productive. Key collaborators on the project include the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS), and Cargill.

In 2020, we also broke ground on the Controlled Environment Food Production Research Complex located on our Waterman Agricultural and Natural Resources Laboratory – the ground-breaking research it will house – will provide us the infrastructure needed to improve food security, our food systems, and make progress towards the Rural and Urban Interface grand challenge.

This facility and the work that will be done inside of it – is part of our overall Waterman vision. With an emphasis on learning by doing, Waterman extends the limits of the classroom from four walls to the entire outdoors – and lets Ohio State and the community come together to take on critical challenges.

Those classrooms are at the center of our college — as are our students.

CFAES embodies the cornerstone college in its teaching mission by directly educating nearly 30% of all Ohio State Columbus campus undergraduate students. But our goal is even bigger – we want every OSU undergraduate in Columbus to have an experience at Waterman – to learn about food, agriculture and the environment- before they leave OSU.

Nearly 25% of all Ohio State non-CFAES undergraduate students enrolled in CFAES coursework during the 19-20 school year and our courses fulfill nearly every Gen Ed breadth category including Social Science, Data Analysis, Social Diversity, Global Studies, Writing, Biological Science, Physical Science, Contemporary Issues, Historical Study, and Cultures and Ideas.

Our undergraduate students comprise 5% of the Columbus campus' undergraduate population, ranking the college as the 5th highest enrollment unit at the University (out of 15 total units).

Our college maintained steady enrollment throughout the 20-21 school year despite the challenges posed by the COVID-19 pandemic. During the Autumn 2020 semester, CFAES showed a decrease of less than 1% in its total student enrollment and an equally successful Spring 2021 semester.

Within our college, the School of Environment and Natural Resources has been attracting new students extraordinarily well throughout the 20-21 school year, as enrollment in the school is projected to have increased by 5.8% over the previous year.

As a direct result of the strong connections with our faculty and staff, 93% of all CFAES students are retained to their second year and our 6-Year Graduation rates exceed the university's average since 2012. Our 4-Year Graduation rates have substantially exceeded the university's average since 2010. The most recent cohort (2016) graduated at a rate of about 75% compared to the university average of 69%.

During the 2019-2020 academic year, CFAES graduated over 900 students, keeping graduation numbers in line with previous years despite the challenges that the pandemic brought to our students. And 93.8% of graduates are employed or are enrolled in graduate or professional school within six months of graduation and just over 75% of those graduates stay in Ohio.

Nearly 25% of all CFAES Columbus campus students and 32% of Wooster campus students are first generation college students, as we continue to build pathways for their success.

With \$2.8 million+ in CFAES scholarships awarded annually our college awards the largest amount of scholarship funding within the university. 80% of freshmen scholarship applicants receive an award, and our scholarship awarding process, guided by Assistant Dean Dr. Pat Whittington, is highlighted as a model at the university.

We also work to ensure career and workforce readiness for our 4-H youth.

The Ohio 4-H Teen Leadership Council conducted a Career Readiness Day where Students from Ohio State, state 4-H groups, and business professionals convened. Supported by The Ohio 4-H Foundation and the Jim and Marlene Helt Fund, Youth learned how to use LinkedIn, the importance of networking, building a resume, interview skills, and business etiquette.

Our deepest appreciation for the thousands of volunteers who pivoted from the usual way of leading activities to ensure Ohio 4-H members still had positive youth development experiences, including home-based community service projects and demonstrations on club Facebook pages.

In our college, we strive to sustain life.

We are a community of big dreamers – who believe that when you marshal science to service, we create a world many can only imagine – where we could end cancer by simply eating the right combination of foods – where soil structure and microbes help us manage specialized agriculture resulting in less need of irrigation, fertilizers, and herbicides – where we simultaneously balance viable agricultural production with food security and environmental sustainability.

At our college, we are doing these things through discovery and research, education, partnership – but mostly at CFAES, we sustain life through the persistent efforts of each one of our people. On behalf of all of us at CFAES, we thank you for your support.