

2020

STATE *of the* COLLEGE ADDRESS

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Today, I represent the faculty, staff, students, alumni, who make up the cornerstone college at The Ohio State University—the College of Food, Agricultural, and Environmental Sciences.

Poised to celebrate our sesquicentennial, we are one college— with three campuses (Columbus, 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.**

Welcome—It's an auspicious day and frequently in our busy lives, we hurry past moments like this one. However, today we convene at the start of celebrating a remarkable 150 year history of our college and reflect on the plan for our next steps which will carry us into the future.

That's a moment that deserves us to slow down and consider not only the legacy of work and its impact but also the people who have been part of our story.

As I've shared that opening in the past couple of years, I find that some pretty heady concepts can roll past without their gravity kicking in.



First, that we are the cornerstone college. The cornerstone is the first stone set in the construction of a masonry foundation. All other stones will be set in reference to this stone, thus determining the position of the entire structure.

We belong to the college which originally gave our institution part of its name (Ohio A&M) and has been a critical force in shaping our comprehensive university. But just as our university has changed and evolved in its 150 years, so have we.

From a college focused primarily on production methods to one with an incredible breadth ranging from production, through metabolomics, carbon sequestration and ecosystem sustainability, international trade, and biopolymer exploration. The reach of our scientists surely far exceeds what our founders could have imagined 150 years ago.

And ponder that for one moment—150 years. Our work has evolved over a century and a half. With students being educated to become thought leaders, and an incredible number of innovations, and discoveries.

For example, the youth organization 4-H was founded in Clark County Ohio over 100 years ago.

“Father of 4-H” A.B. Graham became the first Director of Extension at Ohio State.

The Triplett-Van Doren no-tillage research plots in Wooster were among the first established in the US.

In the late 1950s, a 10 year study of fatal tractor accidents was conducted by Walter McClure and Ben Lamp,

both of the Department of Agricultural Engineering, to understand their nature and causes. Their research indicated a significant number of fatalities related to highway travel of slow moving vehicles (SMV). This resulted in the development of the unique SMV emblem.

Department of Food Science and Technology (FST) alum Dale Seiberling and FST faculty member Jim Harper pioneered the “Clean In Place” technology that is used by dairy, brewing, food, pharmaceutical and biotechnology industries worldwide.

The *AgriNaturalist* is one of the oldest student-run publications in the country, giving a hands-on experience in communications starting in 1894. It celebrated 125 years in 2019.

And of course, all of that—the work, the changes in our science, the breadth, the depth—all of it was dedicated to our shared mission, what we do—why we exist.

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 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 effectively and sustainably harnessed that energy and converted it to the food, fiber, and fuel humans use to thrive. Given that, there was a time when colleges like ours could be content with simply focusing their scholarship on agriculture, on production—basically, on yield. That was the major metric which drove the work of colleges like ours for decades. But not anymore.

For us now, we seek to strike the elusive balance between viable agricultural production, environmental and ecosystem sustainability, and food security and safety simultaneously.

To say this is complex is likely the greatest understatement of our 150 year history, and yet, it drives directly at the very reason for our existence.



This past spring, Rattan Lal, Distinguished University Professor of Soil Science in the School of Environment and Natural Resources, travelled with President Drake to receive the prestigious Japan Prize from the Japanese Emperor. Lal's pioneering research is on no-tillage agriculture—and on methods to sequester carbon dioxide in the soil, such as by planting cover crops and spreading compost. The Prize foundation said Lal has shown ways to manage change “while improving environmental quality and addressing the critical issue of feeding the Earth's population.”

Lal is a great example of what we do.

What we do matters.

The impact of our land-grant universities over the past 150 years has been profound, not only successfully addressing the challenges of our young nation in being able to feed itself but growing into a wide spectrum of world-wide impact and technological advancements.

Many of those changes began with agriculture, but led a revolution in our nation's technology transfer and our economic and scientific successes.

Earlier today, I had the honor of awarding our inaugural Distinguished Professors of Food, Agricultural, and Environmental Sciences. Our college will continue awarding this honorific title on a competitive basis to full professors who have excelled in teaching, research, or outreach/engagement, and whose work has demonstrated significant impact on their fields, students, college, University, and/or the public.

Elena Irwin is a Professor in the Department of Agricultural, Environmental, and Development Economics (AEDE) and the Faculty Director of the Sustainability Institute at Ohio State. Irwin is widely recognized as one of the leading environmental and regional economists in the world

Sally Miller is a Professor in the Department Plant Pathology, with research, extension and teaching responsibilities in vegetable pathology. Miller is globally recognized as a leader in the development and testing of plant disease diagnostic methods, the development of novel approaches for controlling vegetable diseases.

Devin Peterson is a Professor in the Department Food Science and Technology (FST). Peterson is globally recognized for his pioneering work on flavor chemistry. His research is cutting-edge and has changed—and will continue to change—the quality of food enjoyed by consumers.

And Judit Puskas is a Professor in the Department of Food, Agricultural and Biological Engineering (FABE). Puskas is internationally recognized for her outstanding accomplishments in biopolymer and biomaterial invention and green engineering implementation, in both industry and medicine.

This is who we are.



The people in our college are drivers of discovery with over \$44 million of research projects underway and we are getting increasingly better at translating our research so it can be used in ways that change practices, change the bottom line, and change the world.

For example, we have about 140 researchers working on some aspect of Water Quality.

From advancing the science—such as the work of Robyn Wilson, professor of Risk Analysis and Decision Science in the School of Environment and Natural Resources (SENR) and Brent Sohngen, professor of Environmental and Resource Economics in AEDE, who co-authored a report that looked at how climate change is affecting the Great Lakes.

To the application of innovation—such as the work from Our Digital Ag. Team, made up of faculty, staff, and students from across the college—developing new technologies to allow farmers to map variations in soil properties to guide nutrient applications. This same team through Collaboration and Extension—created E-Fields, a summary of on-farm field trials to benefit farmers, scientists, and policymakers.



Essentially, we advance knowledge—farm Science Review has been gathering the agricultural industry for 57 years drawing an annual attendance of more than 100,000. The vast exhibit area provides a marketplace for agricultural operations to find ways to improve efficiency and profitability, as well as environmental sustainability.

Along with 13 other founding members, FABE created the Agricultural Data Coalition to facilitate the sharing of research data between academic institutions and to address farmers' data privacy and security concerns.

Led by Casey Hoy, professor in the department of Entomology, Kellogg Endowed Chair in Agricultural Ecosystem Management and Faculty Director for the Initiative for Food and AgriCultural Transformation (InFact), faculty teams that are part of the InFACT Discovery Theme are exploring what innovative approaches to diversifying agricultural production systems can improve farm viability, environmental quality, and availability of balanced diets for consumers.

Laura Deeter, professor and coordinator of Landscape Horticulture and Horticultural Science at Ohio State ATI, won a 2019 Educator of the Year Award sponsored by the software company Instructure. She wanted to find a way to use technology, specifically her students iPads, to turn teaching what can be a laborious course into something that's fun. Laura used Canvas to turn her plant identification course into a game about plants and zombies.

Our work not only advances science, it advances solutions.

Chieri Kubota, professor in the Department of Horticulture and Crop Science (HCS), has been instrumental in educating others on the benefits of Controlled Environment Food Production. With controlled environment, food can potentially be more nutritious and flavorful. Traditionally, produce has been bred with an emphasis on a longer shelf life and a resistance to pesticides. But if food is grown closer to where it is served the breeding becomes focused more on flavor and nutrition rather than shelf life.

Faculty in our Food Animal Health Research Program (FAHRP), led by Linda Saif, Distinguished University Professor in FAHRP, leveraged a National Institutes of Health (NIH) Grant for over \$2 million focusing on development of low-cost strategies (such as supplemental vitamin A) to enhance immunity critical in swine and humans.

Inside cool water-filled fish tanks in our South Centers in Piketon, Principal Scientist and Director of Aquaculture Research and Development, Hanping Wang, succeeded in raising faster-growing fish. On average, the resulting offspring reach market size six months faster, resulting in significant savings in fish food and in time waiting to sell them.

Directed by Kelley Tilmon, Associate Professor in the Department of Entomology and Director of our Center for Soybean Research, where we integrate interdisciplinary soybean research towards developing laboratory and field-based solutions to improve Ohio soybean production has led to OSU as a recognized leader in soybean research and education in the United States.

Joy Rumble, Assistant Professor in the Department of Agricultural Communication Education and Leadership (ACEL) and ATI, traveled to the four corners of the US this fall to understand consumer perceptions of gene editing and how different education and communication strategies can impact those opinions. This work is part of a USDA Social Implications of Technology Grant. As our scientists make advances in gene editing technology Rumble and her team's work will help to ensure that gene edited products will have a place in the consumer marketplace.

The Field Application Resource Monitor (FARM) app, with development led by Aaron Wilson, Research Scientist - Byrd Polar and Climate Research Center and OSU Extension, helps farmers save both money and the environment using advanced weather forecasting to advise farmers on when to apply fertilizers and pesticides so that they aren't washed away by rain. The app can give specific forecasts for an area as small as 1.5 miles wide—allowing for incredibly accurate and detailed forecasts.

Led by Brian Roe, Associate Chair, Van Buren Professor, and Undergraduate Studies Leader in the Department of AEDE, the OSU Food Waste Collaborative, piloted a small-scale Residence Hall composting initiative, yielding 392 pounds of food waste and compostable food. If implemented in all residence halls, the effort could yield 13 tons of food waste reductions annually.

In November, a National Geographic article, "Coyotes have expanded their range to 49 states—and show no signs of stopping" featured Stan Gehrt, Professor and Wildlife Extension Specialist in SENR, and his nearly two decades of research on urban coyotes and in particular their ability to adjust and adapt to urban environments and the implications this has on their expanding range and co-existence with humans.

AND we advance people.

Dedicated to preventing food-borne illnesses like the one which claimed her 2 year old son, Barbara Kowalczyk, Assistant Professor in FST, established the Center for Foodborne Illness Research and Prevention and received a \$3.4 million grant from the Bill & Melinda Gates Foundation to improve the safety of food.

Sheila Jacobi, Assistant Professor in the Department of Animal Sciences' research in swine nutrition not only benefits food animal agriculture, but also human nutrition. Her research on piglets can be used for positive impacts for infant nutrition as well.

Nicole Sintov, Assistant Professor of Behavior, Decision Making, and Sustainability in the SENR, studies how energy conservation strategies impact different populations. For example, her study found two vulnerable populations, people with disabilities who may be using life-saving equipment and elderly people more sensitive to temperature changes, saw the largest increases in their bills on the time-of-use rates. This work is important to future conservation strategies and policies.



Earlier this summer, as the challenges kept increasing, we began a Rural and Farm Stress Task Force involving teams of faculty and staff across several departments, including OSU Extension and engaged around the challenging conditions facing farmers. Our “Lean on your Land Grant” message says it well- we want Ohioans to know our university can be depended upon to help, to educate, and to be a trusted source of information.



Our college prepares our future workforce, and our future leaders.

There’s no denying our college’s success with students—this year, 3054 students, and 507 graduate students are enrolled.



Our students are prepared to take on their roles as future scientists and leaders. Sarah Steinbrunner, a 2019 alumna graduated on May 5, the next day she began her new job as an associate scientist at Abbott Nutrition in Columbus. In the evenings she continues to work on “Yippea” a brand of allergen-friendly chickpea butter spreads that she developed while still a student majoring in FST.



CFAES has 30 ambassadors, some here today, selected through an application and interview process to give prospective families tours of our college campus, answer questions and relate to visiting students. They also serve as liaisons to the Ohio State student body to help increase awareness around our college. And, they are encouraged to become involved in industry to better relations.



As a sustainability intern with Ohio State’s Zero Waste team, CFAES environmental science major, Melina Mallory, spent most of every football game day this season helping divert the tons of waste generated at Ohio Stadium away from landfills and into composting or recycling.



Kolesen McCoy, a second-year agribusiness and applied economics major, is now leading an organization of 700,000+ members after being selected 2019–20 National FFA Organization president. This is the first time since 1978 that our college has been represented in this position.



And our Ohio State Dairy Cattle Judging Team placed first at the National Intercollegiate Dairy Cattle Judging Contest at the World Dairy Expo. The last time Ohio State won the contest was in 1986.



We also are the proud home to the premier youth program, 4-H. Ohio 4-H youth development engages about 167,000+ young Ohioans – in more than half a million educational experiences youth – most of whom participate in our high-quality educational programs for nearly a decade. We’re working to create increased value in 4-H by incorporating more career exploration, and recognition of the educational impact of these experiences. 4-H is essentially, our youth’s first class in our college.

Through our research, extension, and teaching—CFAES is a contributor to our state’s economic development and social well-being.



The Columbus affiliate of the Urban Land Institute (ULI) recently conferred its 2019 Community Impact Award on the Weinland Park Collaborative (WPC) for its work over the past decade to transform the Weinland Park neighborhood, which has evolved from a distressed, low-income neighborhood with one of the highest violent crime rates in the city into a mixed-income neighborhood that has experienced its first population increase in almost 70 years. OSU Extension was a key on-the-ground partner, among the several partners representing The Ohio State University in the WPC.

Our focus on Health is growing.

With efforts to refocus another Discovery Theme Initiative, Foods For Health, now led by Faculty Director, Devin Peterson, Professor in FST, We think it’s just as likely that the cure for cancer will be found by a food scientist, as a medical researcher. From metabolomics studying diseases such as diabetes, to the microbiome for example, Professor in FST, Richard Bruno’s study provides evidence that green tea encourages the growth of good gut bacteria, and that leads to a series of benefits that significantly lower the risk of obesity.

Antimicrobial resistance is one of the most serious global public health issues (over 700,000 deaths related to Antimicrobial Resistance and costs \$2 billion to the global economy annually). Led by Gireesh Rajashekara, Professor and Interim Head in FAHRP this research funded by the CDC and FAO is looking at the impact of antimicrobial use in plant agriculture on emergence of antimicrobial resistance using a one-health approach.



In research, it’s no longer sufficient to have a single discovery to enhance yield, create greater mechanical efficiencies, or vaccinate a population. Now, research must blend the bench science with applied approaches and its tandem collections of economic and social adjustments and yet, find that balance point that still frees bench science to take us to ideas that today we cannot even fathom.

The ability of our comprehensive university with our depth and breadth across multiple complex systems both internally—such as our microbiome and metabolomics, to the larger local and global systems such as food supply chains and economics—are critical to finding solutions and our college sits at the foundation of much of this work.

It will be the integration of interdisciplinary and transdisciplinary approaches that will lead to the greatest innovations, the most powerful solutions, sustainable models, and revolutionary cures. Not just from medicine and within food and agriculture or natural resources, but also from information technology, data science, social sciences, engineering, and public policy.

Our college is uniquely positioned to lead nationally and globally. Our comprehensiveness and our commitment to engage across disciplines creates the conditions for the next land-grant revolution.

In 2019, we undertook a year-long strategic alignment and planning process. Our goal was to listen closely so that we might identify priorities for our work. But just as importantly, we sought to bring together faculty, staff, students, and stakeholders to have conversations that would lead to discovery and alignment, positively impacting our organizational culture and improving “the way we do things”.

During our alignment conversations, we more clearly articulated our Values of:

- A Fuller Definition of Scholarship – which includes not just research, but also teaching and extension
- Lifespan Learning – recognizing that we want to be the educational partner of choice from PK-12 throughout life

- Diversity and Inclusion – Recognizing the importance of not only being able to engage with people from diverse backgrounds, but taking intentional action to ensure that anyone who wants a place at the CFAES table feels welcome and valued
- Integrity and Accountability – Not only doing the right thing when no one’s looking, being transparent and building trust, but also holding ourselves accountable to the public we serve and ourselves via science-based knowledge, and acting responsibly and justly in our actions and decisions
- Collaboration and Engagement – Starting internally by ensuring our college faculty, staff and students have a voice and are able to use it; Embracing collaboration beyond partnerships; converting “we-they” to “us”; Engaging whether within the university (interdisciplinary work), business and industry, non-governmental organizations, communities, or other universities, and being trusted and valued collaborators.

Creating or improving organizational culture is not situational. It is foundational. Focusing on the culture strengthens the community, collegiality, and collaborative atmosphere. It also strengthens both internal and external partnerships rooted in shared values, core principles, mission, and vision.

It is clear that we have work to do. Throughout the focus groups and feedback sessions, we have heard that as a college, we have gaps in our ability to convene, execute, or support the goals and ideals we cherish.

We have dedicated ourselves to our mission without always thinking about how we continue to support our own work—whether that’s keeping up with maintenance on buildings, refocusing priorities, adapting our language of how we talk about ourselves, and/or shifting our processes. We need to be nimble operationally/organizationally so we can continue to fulfill our mission to the best of our potential.

We are determined to address these gaps and be a leader around the grand challenges, and I am confident that we will continue to do so for three reasons—our team, our scholarship, and our network.

Most importantly is our team. This is a group of talented colleagues, who throughout our strategic planning process engaged and offered perspectives, feedback, encouragement, and candor.

However, two ideas emerged most clearly throughout all the potential goals and suggestions—first, we recognize that we must change and we want to be part of something compelling and big.

Our college matters because our scholarship helps bring progress and possibility, not just to our students and our state, but to people throughout the world. Our ideas and solutions have impact across the spectrum of our disciplines.

It is true that there are others who have the team and scholarship but few also operate with the depth and strength of our interdisciplinary and geographic network. We’ve built a local presence, a strong brand, and deep relationships not just in Ohio’s 88 counties, but nationally and internationally. We are proud to serve as true partners—offering resources and experience and bringing other partners along with us. These networks will continue to be our unique competitive advantage.

Our purpose has driven 150 years of innovation, and it is as strong as at any time in our history.

With these strengths as our foundation, our next steps are to articulate and communicate our plan. That plan not only realigns how we work, but focuses us on fewer, more impactful priorities. We wanted this to be a plan to guide the college for the long term, and in all of our rich complexity. We wanted to reflect our land-grant heritage, and our aspirations for the future.

Two college wide priorities emerged—

1. Improving our operational/organizational position
2. Strengthen our ability to address grand challenges through innovative scholarship

To manage this at the college level, we organized our leadership around teams to support these efforts.

As one example of these efforts, our college is making a significant, long-term commitment to its future, and to Ohio's future, by investing more than \$100 million in its infrastructure. Already, 18 capital projects—in Columbus, Wooster, and other college locations throughout the state, including the work at Waterman Agricultural and Natural Resources Laboratory—have been started in the past year.

CFAES' overall investment signals our momentum moving forward and our intent to be a thriving and dynamic college of the future.

To successfully recruit and retain top talent in faculty, staff, and students, as well as engage industry partners, we need to offer high-quality, modern facilities to conduct their work.

And our second major priority—Strengthening our ability to address grand challenges through innovative scholarship.

Our goal is to run more empowered, focused programs with maximum impact. We have strong fundamentals from which to build in our four grand challenge areas:

- Sustainability
- One Health
- Rural-Urban Interface
- Preparing Future Workforce

We have a long legacy of leadership development and innovation, but recently we have become complacent in the very things that could distinguish us. So, we need to realign how we work as well. As a result, we will focus on three main things:

1. Commit unequivocally to our student-first philosophy
2. Embrace the richness and value of a diverse environment by ensuring we recruit, develop, and retain diverse talent
3. Set fewer, more impactful priorities



We are proud of our student success and want to keep building opportunities for our students to succeed and co-create their learning experiences.

- Our 1st and 2nd year retention rates are among the highest in the university
- We are one of top colleges at OSU for students finishing in 4 years while at the same time engaging in internships and other experiences such as study abroad
- More than 92% of students are employed or accepted into graduate or professional school within six months of graduation
 - 76.9% of CFAES graduates have jobs in Ohio

Ohio State awarded 150 sesquicentennial scholarships to students across the university for the 2019-20 academic year in honor of the sesquicentennial. The Sesquicentennial Student Scholar Leadership Program demonstrates a commitment to increasing access and affordability while recognizing students' academic and non-academic accomplishments and diverse interests.

CFAES has a total of 13 sesquicentennial scholars which include five ATI undergraduate students on our Wooster campus as well as seven undergraduate students and two graduate students on our Columbus campus.



Student Council reorganized its constitution becoming a more representative body. In a few weeks, I will co-moderate with President Kiersten Cavender, a “Breaking the Boundaries” discussion panel. This panel will be made up of faculty, students, and partners of CFAES. Our Student Council's main goals are to: (a) examine philosophical differences among the academic units and undergraduate majors in the College and (b) discuss ways to overcome misconceptions and “boundaries/barriers” (e.g., competing commitments between production agriculture and environmental sustainability and challenges to promoting water quality while supporting livestock production).

We are in the process of creating a Grad Student Advisory Committee. Ten students have volunteered to serve on the committee and begin creating formal guidelines and goals. The group will focus on improving graduate student life including professional development, grad student issues/concerns, and offer insight to administration as needed.

Path to Growth

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

Food security, climate change, increasing antibiotic resistance, water quality—these are all problems that are time consuming and non-sequential, with no clear beginning, middle, or end. They are systems problems, often engaging not just one large system but multiple ones.

And they are human problems, involving people with different opinions, values, interests, and conceptions of how the problem should be defined and solved.

There are no obvious or easy solutions, and technical solutions alone are insufficient.

As we celebrate the sesquicentennial of our college and our university, we are commemorating 150 years of engaging with the public to ensure a better future.

In commemoration of our sesquicentennial, this year we will be awarding the CFAES Spirit of the Land-Grant Award. The purpose of this award is to recognize an individual who supports or creates opportunities that embody our land-grant DNA including: Translational Research, Collaboration and Engagement, students as co-creators, lifespan learning and future perspective. The details will be forthcoming but the award is open to CFAES faculty, staff, students and external partners.



We also are seeking to build systems and processes which supports more interdisciplinary work and retains our talent—one example, this summer we launched the CFAES Water Quality Initiative, aiming to expand the college's impact on Ohio's pressing water quality issues—harmful algal blooms being one of them. In September Heather Raymond began as Director.



We know it will take tools, technology, and ability to keep experimenting. We will soon launch the Knowledge Exchange—a network of researchers, educators, analysts, web developers, and communicators at land-grant universities—to bridge the gaps between academic research, public data, and the public.



I asked at the beginning that we take a moment and pause on the powerful impact of this college. For me, as I do that—my mind always goes to the people who have made it all happen.

Can you imagine how difficult this work must have been at the beginning—when early faculty and staff were first starting this whole thing that has evolved into CFAES? They had such difficulty in communicating and even getting from one place to another compared to us today. But even with that—the truth is they were on the cusp of greatness.

What strikes me is how small groups of people came together to accomplish something with this legacy and impact. It wasn't just shared self-interest. It rose above and embraced the ideals of sharing with and helping others. It wasn't just a pipeline for technology transfer, but a mutual, positive view of others in society, and a particular identification with the ordinary, the humble, and the least privileged.

This work focused on grand challenges is at our college's very heart and soul.

To do it, we need faculty, staff, and students who are engaged, we need partners to work with us, we need

volunteers, and donors willing to join us.

And we need to work, every day—to create a community—not without conflict because we are dealing with such complex issues, but where we can manage our conflict, and support opposing viewpoints, where we truly believe that the whole is greater than the sum of its parts.

That together, we are accomplishing something compelling and big—that our collaborative energy and collective force which we generate when working together is far greater than the progress each of us would make in isolation.

When operating as a true community, we ask the tough questions, we engage in deep conversation, we sometimes disagree and have conflict, and ultimately, we spark more innovation. This is what a college like ours exists to do—this is who we are.

I'd like to close today with drawing your attention once again—to our people and extend my appreciation to our students, our staff, our alumni and donors—and our faculty for their commitment and passion to advance this college forward.

I've found inspiration in our work and in the dedication with which we do it. We have work to do, but we've identified opportunities for improvement and are addressing them with focus and energy. We remain deeply committed to advancing our science, advancing our people—and we share our common purpose—**We Sustain Life.**

