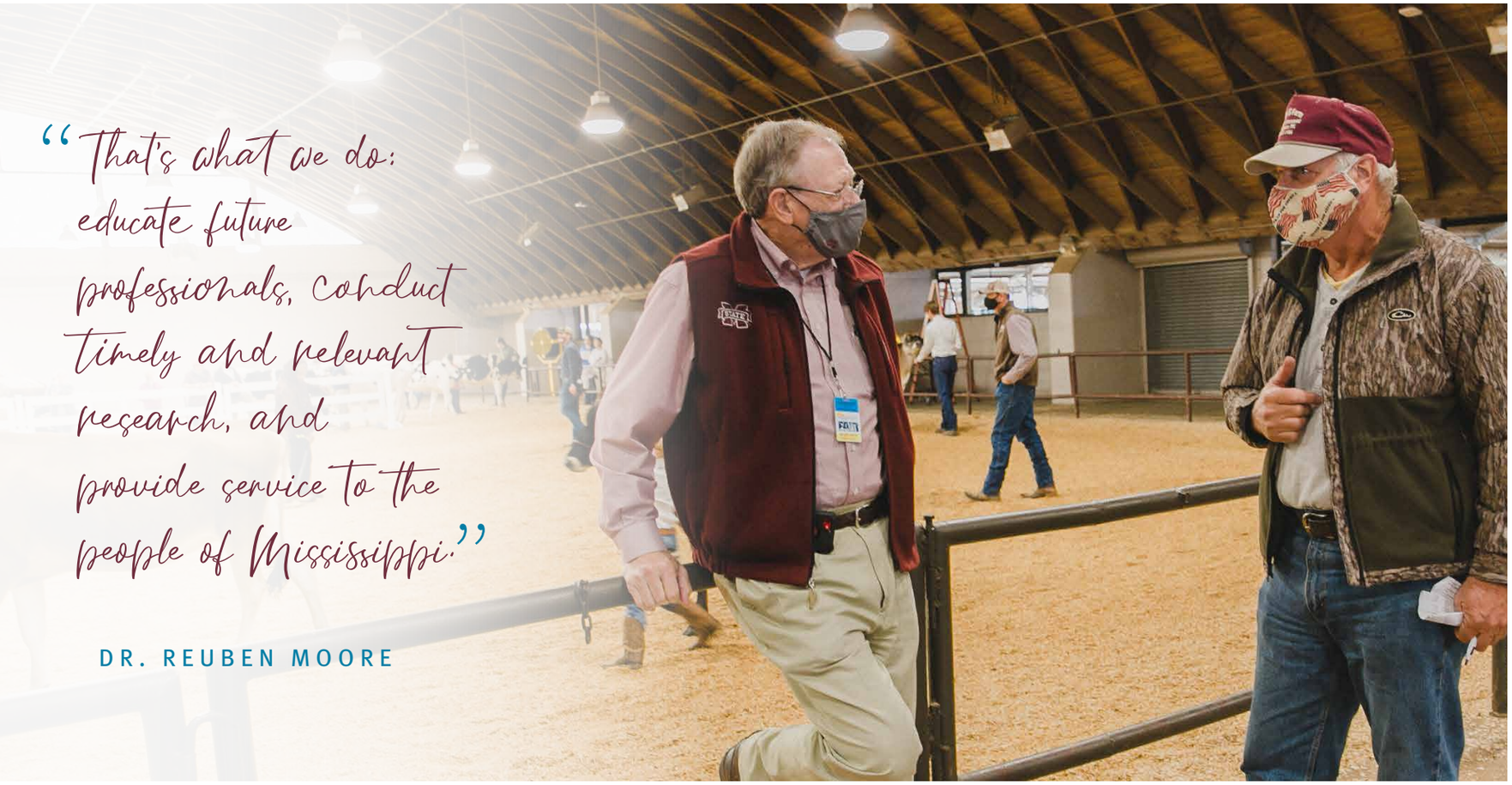
DAFVM

Division of Agriculture, Forestry, and Veterinary Medicine

2020

Annual Report



“That’s what we do: educate future professionals, conduct timely and relevant research, and provide service to the people of Mississippi.”

DR. REUBEN MOORE

▲ *Dr. Reuben Moore (left), interim vice president of the Mississippi State University Division of Agriculture, Forestry, and Veterinary Medicine, met with Brookhaven producer Gary Douglas at the Mississippi State Fair in October 2020.*

DAFVM ADMINISTRATION

MARK E. KEENUM

President
Mississippi State University

GARY B. JACKSON

Director
Mississippi State University Extension Service

KENT H. HOBLET

Dean
College of Veterinary Medicine

REUBEN MOORE

Interim Vice President
Division of Agriculture, Forestry, and Veterinary Medicine

Interim Director
Mississippi Agricultural and Forestry Experiment Station

LOREN (WES) BURGER, JR.

Interim Dean
College of Forest Resources

Interim Director
Forest and Wildlife Research Center

SCOTT WILLARD

Interim Dean
College of Agriculture and Life Sciences

Dear friends:

Change can come slowly at higher education institutions, but it came at record speed in 2020. So many of our day-to-day routines changed so quickly, but the Mississippi State University Division of Agriculture, Forestry, and Veterinary Medicine (DAFVM) continues to adapt to fulfill its mission to provide learning, research, and service.

All six DAFVM units—the College of Agriculture and Life Sciences (CALS), Mississippi Agricultural and Forestry Experiment Station (MAFES), College of Forest Resources (CFR), Forest and Wildlife Research Center (FWRC), College of Veterinary Medicine (CVM), and MSU Extension Service (MSUES)—adjusted as the pandemic changed the local and national landscapes.

College educators and students in the three colleges participated in virtual learning platforms to continue instruction. More than 42 percent of MSU’s research activity happened in the DAFVM units during 2020. CVM partnered with the MSU Longest Student Health Center to expand COVID-19 testing, drastically reducing wait times.

MAFES scientists persisted in growing and monitoring thousands of acres of research trials during the critically important 2020 growing season. The National Center for Alluvial Aquifer Research, a partnership between MAFES and the U.S. Department of Agriculture Agricultural Research Service, launched its new digital presence.

FWRC professionals rotated from remote work to field collection to laboratory work as they continued their research. Significant 2020 accomplishments included a $250,000 project focused on increasing the value of Southern pine, as well as the release of an app that helps farmers assess the $66 million in property damage that feral pigs cause across the state each year.

Statewide, MSUES agents, specialists, and faculty continued working in 2020 to provide essential information and relief services, even while the pandemic, hurricanes, tornadoes, and floods impacted various parts of the state. Long-running programs for producers, officials, and businesses continued online in webinars and meetings.

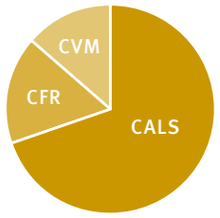
That’s what we do: educate future professionals, conduct timely and relevant research, and provide service to the people of Mississippi. We’ve changed and adapted to ensure that learning, research, and service continue.

Sincerely,

Reuben Moore

Dr. Reuben Moore
INTERIM VICE PRESIDENT

Points of Pride



ENROLLMENT IN FALL 2020 WAS THE *largest ever.*

CVM
498

CFR
609

CALS
2,609

- Private gifts to DAFVM units in FY 2020 totaled almost $25.1 million—only the fourth time this amount exceeded $25 million.
- Despite COVID-19, DAFVM achieved record student enrollment in fall 2020.
- MSU ranked no. 11 nationally in FY 2018 research and development expenditures for agricultural sciences and natural resources and conservation with a total of $105 million—43 percent of MSU's total R&D expenditures.
- Grants and contracts awarded to DAFVM exceeded FY 2019 and totaled more than $110 million in FY 2020, the highest ever.
- MSUES served almost 713,000 direct contacts and safely delivered nearly 3,000 local programs, impacting more than 4 million* Mississippians.
- With the Poultry Science Building's completion in 2020, the three-building meat animal complex is now open. Thanks to the Mississippi Legislature for allocating $34 million of state bond funds that made this possible.

* *Some individuals participated in more than one program and may be counted more than once.*

DAFVM Map

RESEARCH & EXTENSION CENTERS

1. Hiram D. Palmertree North MS Research & Extension Center VERONA
2. Delta Research & Extension Center STONEVILLE
3. Frank T. (Butch) Withers Central MS Research & Extension Center RAYMOND
4. Coastal Research & Extension Center BILOXI

MAFES BRANCHES & UNITS

5. North Mississippi Branch HOLLY SPRINGS
6. Pontotoc Ridge-Flatwoods Branch PONTOTOC
7. Northeast Mississippi Branch VERONA
8. Black Belt Branch BROOKSVILLE
9. Delta Branch STONEVILLE
10. Coastal Plain Branch NEWTON
11. E.G. (Gene) Morrison Brown Loam Branch RAYMOND
12. Truck Crops Branch CRYSTAL SPRINGS
13. South Mississippi Branch POPLARVILLE
14. Seafood Processing Lab PASCAGOULA
15. Prairie Research Unit
16. Beaumont Unit
17. White Sand Research Unit
18. McNeill Unit

MSUES UNITS

19. Crosby Arboretum PICAYUNE
20. MSU Horse Park STARKVILLE

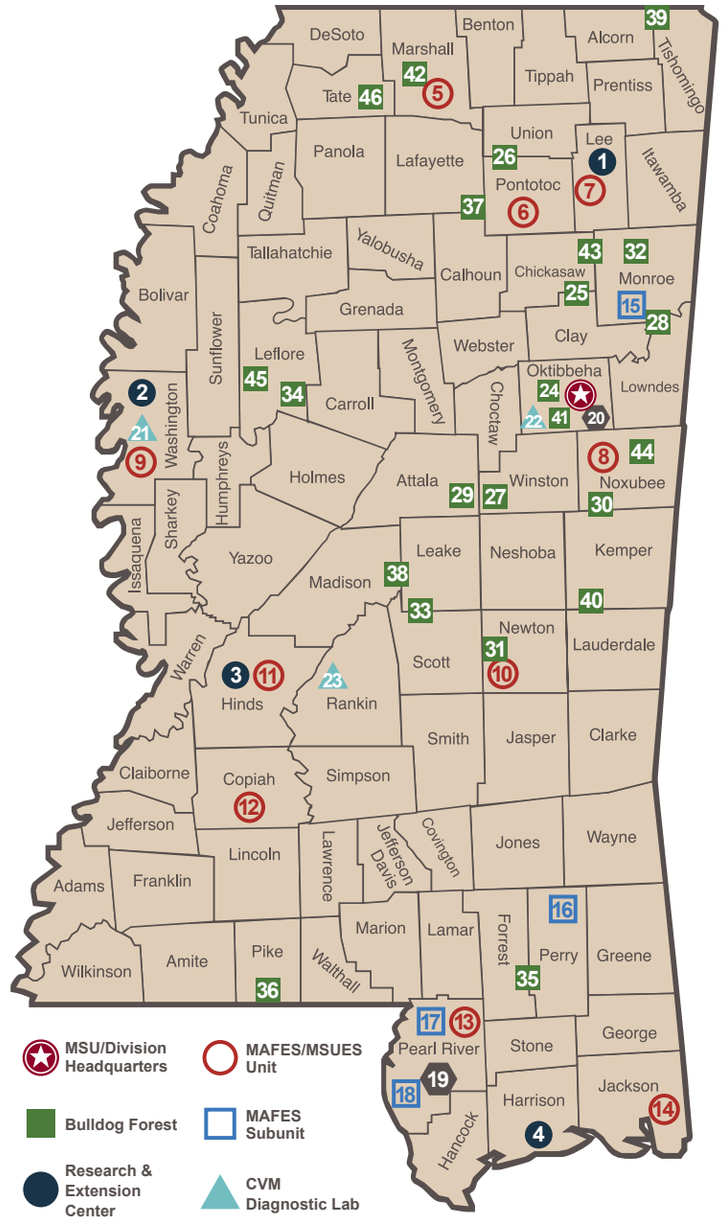
CVM DIAGNOSTIC LABS

21. Aquatic Research & Diagnostic Laboratory STONEVILLE
22. CVM-Diagnostic Laboratory Services MSU
23. Research & Diagnostic Lab/ Poultry Lab PEARL

BULLDOG FORESTS

24. Andrews Forestry & Wildlife Laboratory
25. Brand Forest
26. Brooking Forest
27. C.M. Chafee Forest
28. Columbus Air Force Base Property
29. Gober Forest
30. Hall Timberlands Forest
31. Harris Forest
32. H.K. & J.K. Holloway Reserve
33. Col. K.D. Johnson Forest
34. McGeary Sidon Plantation
35. Mortensen Forest
36. Norma Lea O'Quin Forest
37. Phillips Memorial Forest
38. John & Jane Player Property
39. Sharp Forest
40. Shaw-O'Reilly Property
41. J.W. Starr Memorial Forest
42. Annie Seal Matthew–Porter Forest
43. Margaret Demoville Forest
44. The Triplett Forest
45. The Gulledge Forest
46. The Bowen Forest

Three additional forests are unidentified at the request of anonymous donors.



An MSU Extension Service office is located in each of the 82 counties.

CALS

College of Agriculture and Life Sciences

Dr. Daniel Chesser (left), an assistant professor in the Department of Agricultural and Biological Engineering, teaches students to work with steel in a laboratory. (Photo by David Ammon)

The mission of the College of Agriculture and Life Sciences (CALS) is to advance agriculture and natural resources through teaching and learning, research and discovery, and service and engagement, which will enhance economic prosperity and environmental stewardship to build stronger communities, to improve the health and well-being of families, and to serve people of the state, the region, and the world.

CALS added new programs in 2020, including companion animal management and meat science certifications, to meet the needs of students and industries. Additionally, the new Bachelor of Applied Science degree allows students to apply technical education credits earned from a community college or the military to a bachelor's degree in one of 14 emphasis areas. A 2020 agreement with Mississippi Gulf Coast Community College allows students to transfer credits toward a Bachelor of Science degree in culinology or agricultural science at MSU. Eight majors also began the Thrive-in-Five program, which allows students to complete their bachelor's and master's degrees in 5 years.

CALS students continue to represent the college and university in professional organizations. Students competed and won accolades from numerous professional organizations with oral presentations and posters. Several students received prestigious recognitions, including the Barry Goldwater Scholarship, the Future Leader in Science award, the Astronaut Scholarship Foundation 2020 Astronaut Scholars Class, the Mississippi Rural Dentists Scholarship program, the Mississippi Rural Physicians Scholarship program, and the Mississippi Space Grant Consortium. Additionally, some 30 students have become licensed as unmanned aerial vehicle pilots by the Federal Aviation Administration through MSU's precision agriculture certificate program and concentration.

College of Agriculture and Life Sciences

Left: Landscape architecture students explain their design concepts in class. (Photo by David Ammon) Right: Graduate student Eda Ozdemir places fish in an IVIS imaging system for research in a new Department of Animal and Dairy Sciences lab. (Photo by Beth Wynn)

▲ *Lynette McDougald, floral management instructor in the Department of Plant and Soil Sciences, offers real-time instruction on floral design via Webex, reaching students around the world. (Photo by Dominique Belcher)*

- To protect students, faculty, and staff from contracting and spreading COVID-19, all CALS courses moved online from mid-March 2020 through the end of the spring semester, when spring graduation ceremonies were held virtually.

- CALS faculty developed expanded online summer course offerings with creative virtual instruction, such as an online floral-design course that allowed a faculty member to ship flowers and materials to students, including one in New Zealand.

- In preparing for the fall semester, faculty developed online, face-to-face, and hybrid courses that would allow students to socially distance and learn.

- With recruiting venues such as college fairs and career fairs canceled due to COVID-19, CALS recruiters developed a strategy to reach prospective students through virtual exhibits, email blasts, social-media posts, and videos.

- Recruiters met students individually, while practicing social distancing and other safety precautions, at MSU Research and Extension Centers around the state.

- CALS has a new initiative to boost recruitment with prospective students: encouraging teachers, alumni, and friends to nominate students to pursue one of the 17 majors in CALS.

- Faculty were recognized virtually, through a news release and social-media posts, for outstanding teaching, research, service, and diversity.

CFR

College of Forest Resources

◀ *Graduate teaching assistant Vanessa Hoffman of Fayetteville, North Carolina, and Dr. Don Jackson, CFR Sharp Professor Emeritus of Fisheries, ready a boat, at MSU's Chadwick Lake, for use in a limnology laboratory course. Wildlife, fisheries, and aquaculture majors Bradley Marler of Starkville and John Skinner of Gaffney, South Carolina, (on the bank) are learning to handle a boat properly, a necessary skill for hands-on learning about inland aquatic ecosystems. (Photo by Ariell Fain)*

The mission of the College of Forest Resources (CFR) is to promote, support, and enable the management, conservation, and utilization of forest and other natural resources to benefit the stakeholders of Mississippi, the nation, and the world.

CFR added new majors and concentrations to meet the needs of students and forest industries. A new online master's program in conservation education was added, as well as a new non-thesis online master's program in the Department of Sustainable Bioproducts. Sustainable bioproducts was also added as one of MSU's Thrive-in-Five accelerated programs, which allows students to complete bachelor's and master's degrees in 5 years. A forestry business concentration was added to the forestry major in the Department of Forestry.

CFR students continue to excel. The Mississippi student chapter of the Society of American Foresters was the leading chapter in the nation for the third consecutive year in 2020. For 22 years, the student chapter has placed in the top three in the nation. Students in the Department of Wildlife, Fisheries, and Aquaculture also placed in the Southeast Deer Study Group for their poster and oral presentations.

College of Forest Resources

▲ *Autumn Carroll, a junior from Lithia, Florida, in the Department of Wildlife, Fisheries, and Aquaculture, participates in a research project to examine aquatic foods webs in the Pascagoula River. (Photo submitted)*

- All spring semester CFR courses, including graduation and celebration ceremonies, moved online in mid-March 2020 to protect students, faculty, and staff from contracting and spreading COVID-19.

- CFR's annual student awards banquet, suspended because of the university's shelter-in-place policy, was held remotely on social media.

- CFR faculty developed expanded online summer course offerings for all students.

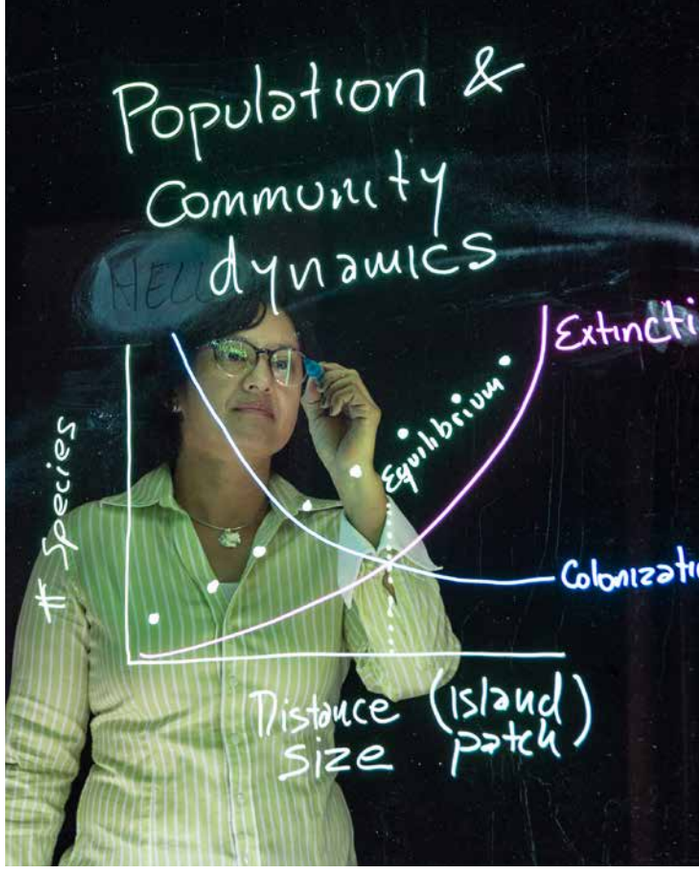
- The CFR administration reached out to alumni and friends to expand summer internships, including teleworking opportunities, for students to gain professional experience.

- For the fall semester, faculty developed online, face-to-face, and hybrid courses to allow students to socially distance while learning; 80 percent of all CFR fall classes included a face-to-face component.

- Many classes were held outside to allow social distancing.

- With recruiting venues such as college fairs and career fairs canceled due to COVID-19, CFR leaders promoted the college to prospective students through virtual exhibits, email blasts, social-media posts, and videos.

- Recruiters used the four MSU Research and Extension Centers throughout the state to meet with students individually while practicing social distancing and other safety precautions during the fall.



Top: Dr. Sandra Correa, assistant professor in the CFR Department of Wildlife, Fisheries, and Aquaculture, uses a lightboard in the library's AV studio to record her summer applied-ecology class delivered online. The library instructs professors on the use of postproduction to flip their videos on the horizontal axis, so that when they deliver the class video, the students can read the lightboard writing. For illustrative purposes, this photo has been flipped in the same way. (Photo by Megan Bean)
Bottom: Students in the Department of Sustainable Bioproducts work in the laboratory with Dr. Rubin Shmulsky. (Photo by Dominique Belcher)

CVM

College of Veterinary Medicine

▲ *Researchers in the Department of Comparative Biomedical Sciences have made significant discoveries in destroying a strain of feline coronavirus. Under the leadership of Dr. Keun Seok Seo, an associate professor of microbiology, the research reveals that the substances studied effectively kill the coronavirus that causes feline infectious peritonitis (FIP), an incurable viral disease occurring in wild and domestic cats. (Photo by Tom Thompson)*

The mission of the College of Veterinary Medicine (CVM) is to protect and improve the health and well-being of animals and humans, while contributing to the economic development of Mississippi and surrounding regions by providing quality professional veterinary education, advancing research in veterinary and biomedical fields, and serving the community through excellent diagnostics, clinical care, and shared learning.

Throughout the COVID-19 pandemic, CVM remained committed to educating students while serving the community. In March, the college adjusted lecture delivery to accommodate online learning. Clinical responsibilities to provide care to clients and patients were covered by faculty, staff, and student volunteers. CVM's commitment allowed education to continue in the spring, and 86 Doctor of Veterinary Medicine degrees and 31 Bachelor of Science in Veterinary Medical Technology degrees were conferred to the Class of 2020. The Class of 2024 was welcomed during the summer.

In September 2020, CVM partnered with the MSU John C. Longest Student Health Center to process COVID-19 diagnostic tests effectively and efficiently. CVM personnel have continued, each shift, to process as many as 350 nasal swabs collected from health center patients. The college will begin antibody testing in early 2021 to help identify individuals who have already been infected and better estimate the overall prevalence of COVID-19 infections at MSU. The information obtained from antibody testing may be useful in monitoring the effectiveness of public health measures implemented to limit the spread of the infection.

College of Veterinary Medicine

▲ *CVM is working with the MSU John C. Longest Student Health Center to ensure COVID-19 diagnostic tests are processed effectively and efficiently. Samples from nasal swabs obtained from health center patients are transported to CVM in sealed tubes where they are processed in CVM's biosafety level-2 laboratory. (Photo by Tom Thompson)*

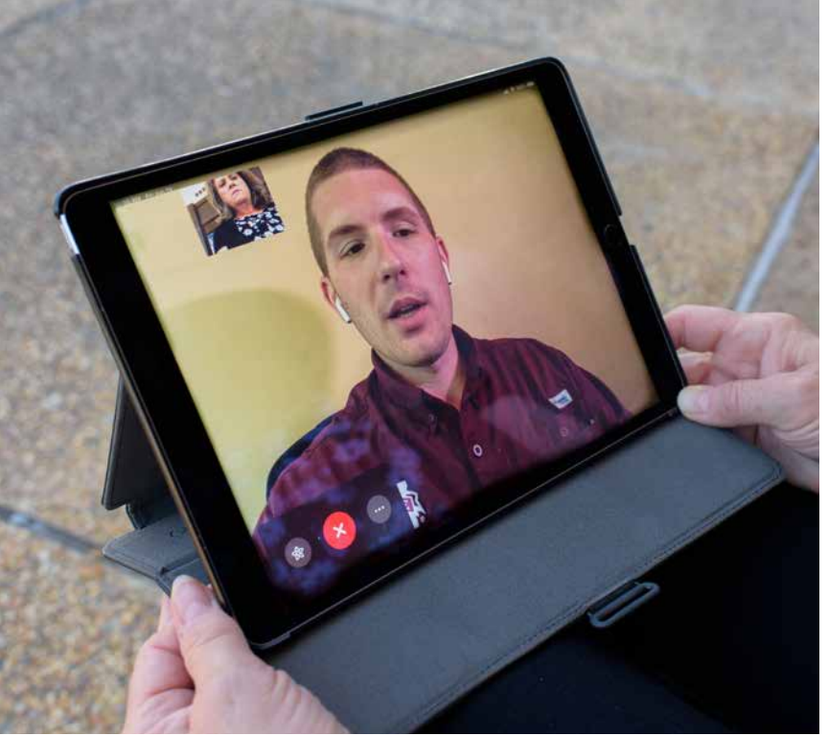
CVM has continued to fulfill its responsibility of educating veterinary students and providing essential services during the pandemic to ensure that veterinary care remains available to agricultural and companion animals locally and throughout the region. (Photo by Tom Thompson) ▶

◀ *Early in the pandemic, CVM worked with the University of Mississippi Medical Center, the MSU Longest Student Health Center, and OCH Regional Medical Center to evaluate CVM's ability to help care for the public. CVM shared personal protective equipment and medical supplies with the health center and two ventilators with the hospital. Delivering the ventilators were Dr. Ron McLaughlin (left), CVM associate dean for administration, and Dr. Joey Burt, CVM assistant dean for clinical services and Animal Health Center director. Ventilators were accepted by Dr. Harry Holliday, OCH pulmonologist; Wes Andrews, OCH emergency preparedness coordinator; and David Jackson, OCH CEO.*

- Throughout the pandemic, CVM's Animal Health Center has remained open to continue offering a full range of primary and tertiary care for agricultural and companion animals. The large animal medicine ambulatory service team has continued providing on-the-farm care for all species of large animals, and CVM's Veterinary Specialty Center, located in Starkville, and Animal Emergency and Referral Center, located in Flowood, have continued to provide specialty, tertiary, and emergency care.

- The Mississippi Veterinary Research and Diagnostic Laboratory provides surveillance and diagnostic services in support of practicing veterinarians, individual producers, pet owners, and the livestock industry, as well as tests to satisfy state and federal regulations regarding animal health, transportation, and export. The Poultry Research and Diagnostic Laboratory provides diagnostic services, field services, and regulatory testing to the Mississippi poultry industry, non-commercial poultry producers, and pet bird owners. The services provided through these laboratories are vital to the state's agricultural economy, so they remained fully functional during the pandemic.

- The CVM Shelter Medicine Program literally moves healthy dogs and cats from euthanasia lists to loving homes. Although the mobile veterinary unit was not used during the pandemic, the program's work has continued throughout through an on-campus surgery service.



The MSUES Center for Government and Community Development continued delivering services to elected officials around the state. Here, Dr. Jason Camp, MSUES instructor, video chats with Jo Ann Robbins, president of the Mississippi Municipal Clerks and Collectors Association. (Photo by Kevin Hudson)

Dr. Dana Morin, an assistant professor in the Department of Wildlife, Fisheries, and Aquaculture, teaches class under the trees in front of Thompson Hall. (Photo by Cory Bailey)

LEARNING, SERVICE, AND RESEARCH *Continue at* DAFVM

So much in our day-to-day lives has changed in 2020, as we navigate the pandemic and its impacts on our routines and everyday lives. However, faculty and professionals in the Mississippi State University Division of Agriculture, Forestry, and Veterinary Medicine continue their mission.

During the COVID pandemic, Dr. John Blanton speaks at orientation to animal and dairy sciences students in the Newell-Grissom Building. (Photo by Beth Wynn)

CVM's Oncology Service provides innovative treatment while offering hope and compassion with a goal of complete healing for dogs and cats with cancer. Dr. Taya Marquardt, oncology team leader, guides CVM students and interns through this clinical rotation. (Photo by Tom Thompson)

In the Department of Sustainable Bioproducts, graduate student Yali Li and Dr. Jason Street, assistant professor, measure the amount of force needed to break a piece of lumber, work supported by FWRC. (Photo by Dominique Belcher)

MAFES scientists Dr. Shecoya White, an assistant professor in the Department of Food Science, Nutrition, and Health Promotion, and Dr. Derris Devost-Burnett, an assistant professor in the Department of Animal and Dairy Sciences, dip strawberries into a solution that will extend the shelf life of food and inhibit the growth of pathogenic microorganisms. (Photo by David Ammon)

MSUES

Mississippi State University Extension Service

Hundreds of young people participated in the first Virtual 4-H LEGO Engineering Camp, just one of the many youth development activities MSUES moved online to ensure participants' safety.

The Mississippi State University Extension Service (MSUES) provides research-based information, educational programs, and technology transfer focused on issues and needs of the people of Mississippi, enabling them to make informed decisions about their economic, social, and cultural well-being.

Millions of Mississippians benefited from MSUES services in 2020. MSUES agents, specialists, and educators prioritized safe practices as they continued to deliver services. Programs and activities in Extension's five major subject areas—4-H, agriculture, natural resources, family and consumer sciences, and government and community development—are addressing local Mississippians' challenges by sharing problem-solving tools. Digital communication, by phone or Internet, has allowed regular workshops and meetings to continue, and in-person meetings have continued to observe social distancing and masking requirements.

Reaching clients where they are has always been a major goal for MSUES personnel, but the pandemic introduced the need to adapt quickly. With offices in all 82 Mississippi counties, many local Extension agents began organizing and delivering regular webinars to clients, and some programs shifted to digital delivery. Social-media usage increased. Agents united to develop video series to share important, research-based information with families at home. Specialists developed new hashtags and education threads to engage broad audiences. Podcast and website engagement have continued to increase, and MSUES continues adapting to extend knowledge and change lives.

Mississippi State University Extension Service

▲ *More than 1,500 Master Gardeners around the state found ways—socially distant and masked—to continue learning and volunteering in communities safely as the pandemic unfolded in 2020. These gardeners from Pearl River County learned about succulents with their local MSUES agent. (Photo submitted)*

Left: MSUES agents, who work in local offices in every Mississippi county, participated in a range of food and supply distributions as the pandemic unfolded in 2020. MSUES agent Marven Cantave helps deliver food for the Lexington Food Pantry. (Photo by Kevin Hudson) Right: Hulon McKenzie (left) and Terry Joe McKenzie consult with Amanda Masholie, MSUES agent in Lawrence County, immediately after the tornado that hit on Easter. MSUES offers a range of disaster-assistance services to state residents. (Photo by Kevin Hudson)

- In 2020, MSUES delivered 195 approved educational programs to approximately 317,000 direct contacts—impacting approximately 4 million people—earning and saving Mississippians and the state economy millions of dollars.

- MSUES work continued uninterrupted during the pandemic; as an essential agency, MSUES is written into the Mississippi Emergency Management Agency Comprehensive Emergency Management Plan.

- MSUES personnel maintained their duties caring for animals and row crops during the pandemic, and they supported the mass care and feeding of children and adults displaced or left without resources.

- One-third of MSUES programming shifted to online delivery during 2020.

- Even when offices closed because of statewide mandate April 1, MSUES personnel teleworked using cell phones, iPads, laptops, and teleconferencing, to respond to clients and disseminate information.

- MSUES personnel mobilized to offer assistance after April tornadoes; despite the pandemic, agents documented damage and directed producers to state and federal programs that provide emergency funding.

- To prevent the spread of COVID-19, all in-person events were canceled through September 1, and MSUES fast-tracked the conversion of in-person Extension programs to online ones.

- Coronavirus informational posts on the MSUES website received almost 28,000 hits in 2020.

FWRC

Forest and Wildlife Research Center

▲ *Lori Hearon (second from left), a Federal Aviation Administration-certified UAV pilot and master's student from Ethel, Mississippi, flies a UAV to evaluate grassland bird detection above a plot of native grass at the W. B. Andrews Agricultural Systems Research Farm. Looking on are Dr. Jesse Morrison (left), an assistant research professor in the Department of Plant and Soil Sciences; master's student Megan Martin of Mount Vernon, Kentucky; and Dr. Mark McConnell, an FWRC assistant professor in the Department of Wildlife, Fisheries, and Aquaculture. Typically, the team flies at night and at high altitudes. (Photo by David Ammon)*

The mission of the Forest and Wildlife Research Center (FWRC) is to expand, through research, the fundamental and applied knowledge upon which forestry, forest products, and wildlife and fisheries disciplines are based; and to assist in conserving, developing, and using the forest, forest products, and wildlife and fisheries resources of Mississippi, the nation, and other countries through research, technology transfer, and other service activities.

FWRC scientists in the Department of Wildlife, Fisheries, and Aquaculture are using unmanned aerial vehicles (UAVs) to improve grassland bird conservation and to assist researchers in detecting quail coveys. The new method for estimating bird populations also provides a faster, more accurate, and less disruptive way to study other grassland bird species, while simultaneously benefiting conservation efforts. FWRC scientists in the Department of Forestry are using UAVs to conduct forest inventory and forest damage assessments. Additionally, foresters are using UAVs fitted with light detection and ranging technology, as well as hyperspectral imaging capabilities, to determine how fast trees are growing, how much water and nutrients they are using, and how much carbon they are storing.

The Department of Sustainable Bioproducts procured the 32,000-specimen David A. Kribs wood collection, the nation's fourth largest such collection. It will be used to enhance machine learning, forensics, and artificial intelligence. Scientists are using the collection to teach computers to use machine vision technology to recognize wood species better.

Forest and Wildlife Research Center

Left: Dr. Qin Ma and Dr. Austin Himes, assistant professors in the Department of Forestry, measure a poplar tree planted for bioenergy. (Photo by David Ammon) Right: Dr. Frank Owens, an assistant professor in the Department of Sustainable Bioproducts, examines a piece of red oak. FWRC scientists are conducting research aimed at teaching computers to recognize wood species better using machine vision technology. (Photo by Dominique Belcher)

▲ *Adam Wade, a graduate student in the Department of Sustainable Bioproducts, examines wood from the 32,000-specimen David A. Kribs wood collection, the fourth largest in the U.S. (Photo by Dominique Belcher)*

- FWRC scientists responded to numerous requests for information and technical assistance from wood supply-chain stakeholders along the entire value chain, from forest landowners seeking to sell timber to mills trying to maintain safe operations under social-distancing guidelines.

- Department of Sustainable Bioproducts research continued to assist landowners, manufacturers, and the construction industry by applying FWRC-sponsored research. Scientists worked to enhance cross-laminated timber panels to reduce construction time and protect against insects and fungi. Schedules were alternated in shifts to prevent the spread of COVID-19.

- FWRC faculty and staff facilitated nontraditional learning in short courses and workshops through websites and technology.

- To prevent the spread of COVID-19, Department of Forestry scientists and students continued FWRC work in the field while social distancing to conduct research, enhance forest management, and monitor wildlife habitats.

- As part of their FWRC work, faculty in the Department of Wildlife, Fisheries, and Aquaculture developed a citizen science program to report sightings of vultures to help reduce incidents of collisions of the enormous bird with military and civilian aircraft.

- Faculty working with FWRC created an app for farmers and the public to report the location of wild hog sightings and damage.

- FWRC researchers developed an outreach publication on how to create pollinator habitats at home.

MAFES

Mississippi Agricultural and Forestry Experiment Station

◀ *Dr. K. Raja Reddy, a research professor in the Department of Plant and Soil Sciences, examines rice samples as part of his MAFES studies on next-generation rice seed germination. Reddy and his team are investigating the effects of various climate-change factors on rice, an important crop for global food security. Reddy recently was elected president of the Mississippi Academy of Sciences. (Photo by Megan Bean)*

The mission of the Mississippi Agricultural and Forestry Experiment Station (MAFES) is to advance agriculture and natural resources through teaching and learning, research and discovery, and service and engagement, which will enhance economic prosperity and environmental stewardship to build stronger communities, improve the health and well-being of families, and serve people of the state, the region, and the world.

New facilities with modern laboratories for MAFES research opened in 2020. The 26,500-square-foot Poultry Science Building officially opened in a three-building complex that also includes the Animal and Dairy Sciences Building and the Meat Science and Muscle Biology Lab. The Department of Poultry Science also opened a new Animal BioSafety-Level-2 facility to conduct research on pathogenic bacteria that affect the poultry industry. New irrigation systems, to ensure that scientists are studying the most modern irrigation technology, were installed at the R. R. Foil Plant Science Research Center, W. B. Andrews Agricultural Systems Research Farm, Black Belt Branch Experiment Station, and Delta Research and Extension Center.

MAFES partners with many agencies and organizations to help producers feed and clothe the world and sustain the environment. Congress established the National Center for Alluvial Aquifer Research between the USDA Agricultural Research Service and MAFES to address water resource challenges along the Mississippi River Alluvial Aquifer. Also, MAFES and the U.S. Fish and Wildlife Service Migratory Bird Field Office are leading more than 100 wildlife scientists and land managers who are monitoring and aiding birds along the Gulf of Mexico. Similarly, MAFES partners with the state's row-crop commodity boards, including corn, soybean, rice, peanut, and cotton, to research ways to increase yields and profits while decreasing inputs.

Mississippi Agricultural and Forestry Experiment Station

▲ *Urita Agana, a senior biochemistry major, and her father, Dr. George Awuni, an assistant research professor in the Department of Plant and Soil Sciences, discuss soybeans at the MAFES R. R. Foil Plant Science Research Center. Agana is an undergraduate research scholar working on soybean taproot decline under the direction of Dr. Sorina Popescu. Awuni is working with the U.S. AID Soybean Innovation Lab to help farmers in Africa grow the crop for sustenance. (Photo by David Ammon)*

Left: Agricultural technician Hannah Valigura (left) and facilities supervisor Ashley Glenn enjoy time in the field with horses at the MAFES Equine Unit of the H. H. Leveck Animal Research Center. (Photo by David Ammon)
Right: Dr. Mark Shankle, a research professor in the Department of Plant and Soil Sciences, loads seed into a planter at the Pontotoc Ridge-Flatwoods Branch Experiment Station,where he conducts MAFES research.

- MAFES personnel facilitated short courses and workshops through websites and technology.

- MAFES continued to provide unbiased, comprehensive information for farmers making planting decisions during the COVID-19 shutdown. The annual MAFES Official Variety Trials, which evaluate commercially available varieties of corn, soybeans, wheat, sorghum, cotton, rice, oats, and forages, were planted, just as in years past.

- Despite the global shutdown, MAFES scientists continued agricultural research and technology transfer by working in fields, planting crops, scheduling irrigation and crop protection, harvesting crops, and collecting and analyzing data.

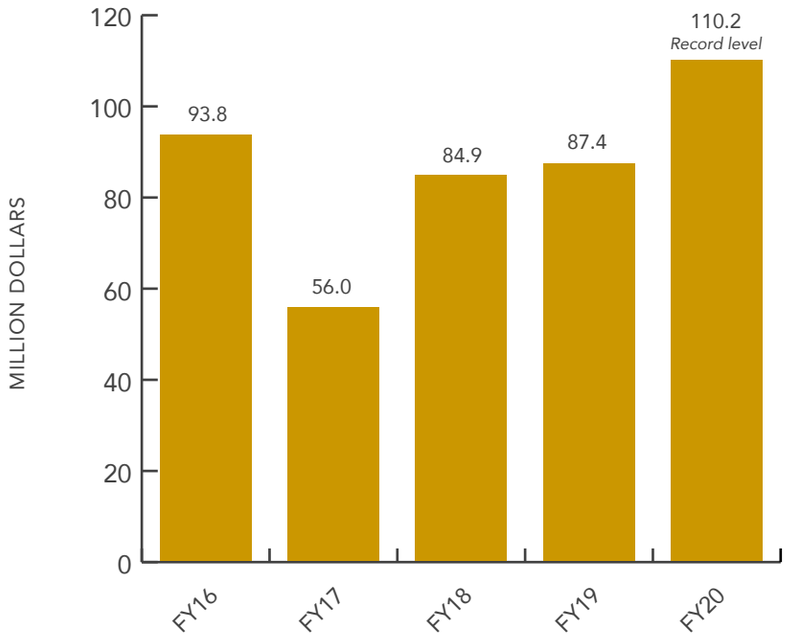
- MAFES personnel at the Bearden Dairy Research Center continued to milk about 420 dairy cows twice daily; milk from the dairy was used to manufacture the ever-popular MSU cheese produced in the Custer Dairy Processing Plant.

- MAFES scientists on campus and at the Delta Research and Extension Center in Stoneville continued to manage 343 aquaculture ponds, including feeding fish and ensuring adequate oxygen levels.

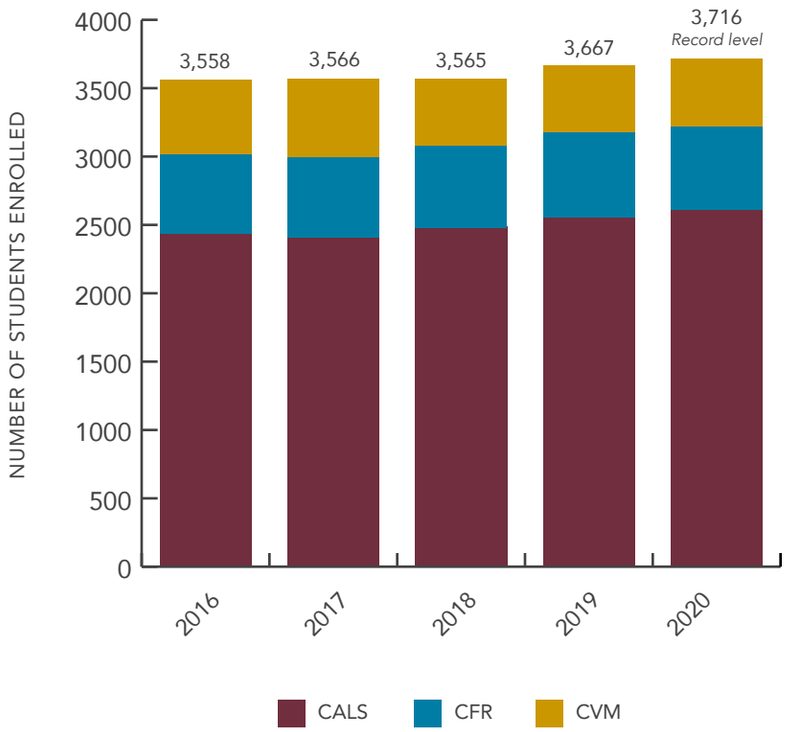
- Faculty and staff in the MAFES Beef Unit, MAFES Poultry Unit, and MAFES Equine Unit continued to care for animals during the COVID-19 shutdown, including the 2,500-head beef herd, 2,800 chickens, and 80 horses, along with sheep, lamb, and pigs.

BUDGET OVERVIEW

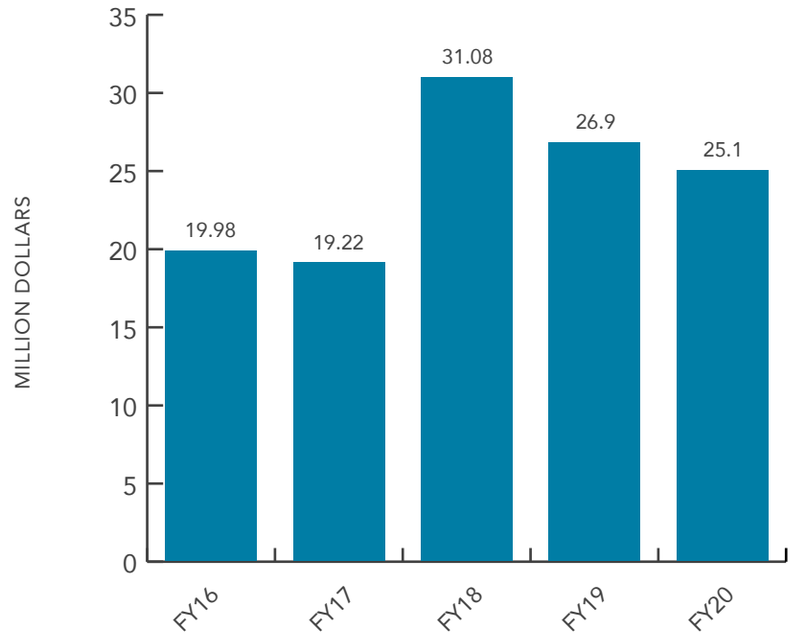
GRANTS & CONTRACTS RECEIVED



ENROLLMENT



PRIVATE CONTRIBUTIONS



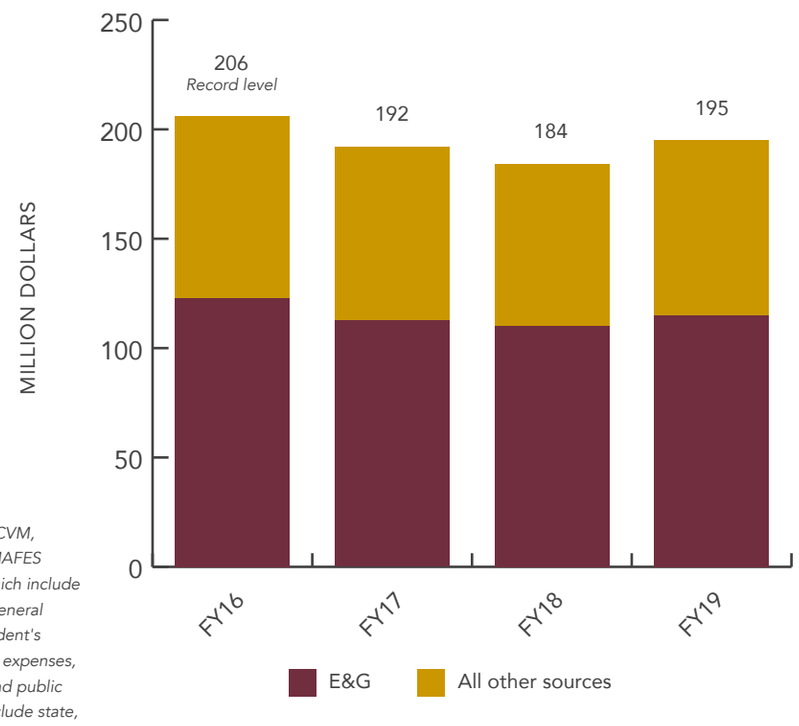
Ranked #11 Nationally

TOP 12 SINCE 1998

In Total Higher Education R&D Expenditures in Agricultural Sciences and Natural Resources and Conservation | FY 2019

Source: National Science Foundation Higher Education Research and Development Survey | FY 2019

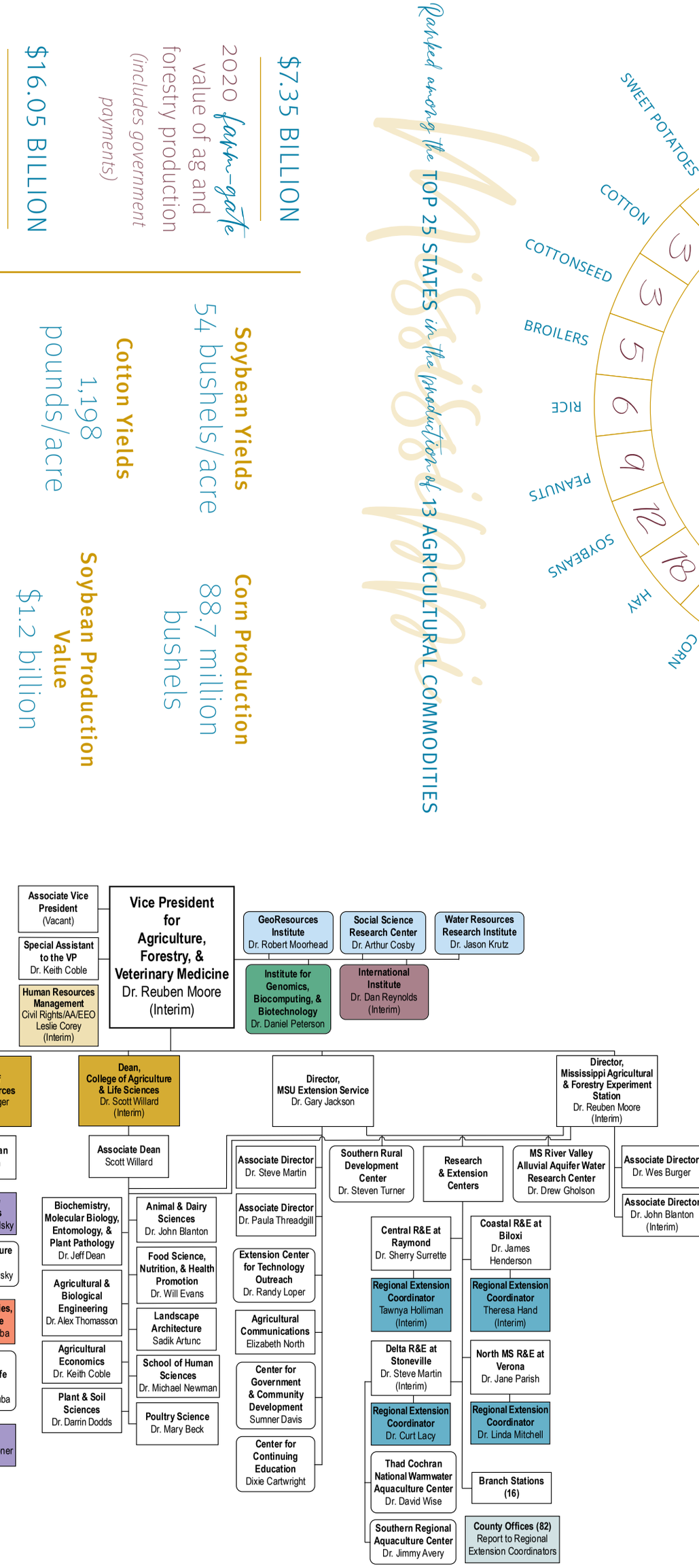
TOTAL EXPENDITURES



This graph combines CVM, FWRC, MSUES, and MAFES E&G expenditures, which include the educational and general spending for each student's education and related expenses, organized research, and public service. E&G funds include state, federal, tuition, sales, etc. All other sources include restricted and designated funds.

Division of Agriculture, Forestry, and Veterinary Medicine

2020 Organizational Structure



NEW FACILITY NAMING
Opportunities

MEAT SCIENCE AND MUSCLE BIOLOGY LABORATORY

The 15,000-square-foot building includes a harvest area, demonstration area, and freezer space, as well as research laboratories and a classroom.

ANIMAL AND DAIRY SCIENCES BUILDING

This three-story building contains about 34,500 square feet of offices, conference rooms, classrooms, and labs.

POULTRY SCIENCE BUILDING/CONNECTOR

This two-story building contains 26,500 square feet of offices, conference rooms, classrooms, and labs. The ADS/Poultry Science connector is about 7,000 square feet. Construction was completed in November 2020.

If interested, contact: WILL STAGGERS 662-325-2837

MISSISSIPPI STATE UNIVERSITY™
DIVISION OF AGRICULTURE, FORESTRY, AND VETERINARY MEDICINE

BOX 9800, MISSISSIPPI STATE, MS 39762
(662) 325-3006

DAFVM.MSSTATE.EDU

Produced by Agricultural Communications.

M2389 (1800-01-21)