

# *Strategic Plan*



## **REPORT CARD**

(Fiscal Year 2010–2015)





**NORTH CAROLINA AGRICULTURAL  
AND TECHNICAL STATE UNIVERSITY**  
College of Agriculture and Environmental Sciences



**T**hank you for taking part in the College of Agriculture and Environmental Sciences' Strategic Plan Report Card for the 2011-2015 academic years.

This report is a sample of the outstanding endeavors that have been completed by the College in fulfilling our mission as a land-grant university, established in 1891.

The achievements made in the past five years are a testament to our talented students, faculty and staff, as well as our dedicated alumni and the many supporters of our College, and of North Carolina A&T.

Looking ahead, the CAES will continue to excel in fostering a strong academic and intellectual core, in employing research-based methodology and technologies and targeted outreaches to respond to our communities' diverse needs and challenges. Our goals are in line with Preeminence 2020, the University's strategic pathway to excellence.

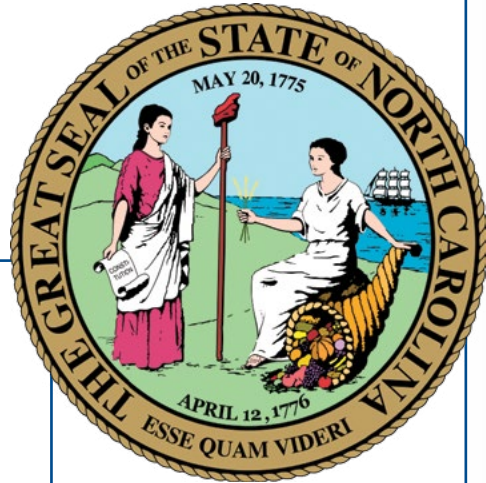
I look forward to leading the CAES through the course ahead, and I encourage your support and suggestions.

**Dr. Shirley Hymon-Parker, interim dean**

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**A**griculture and agribusiness have guided the economy of North Carolina since its beginnings. Even our state seal — which features a cornucopia — recognizes the importance of agriculture to our state. Agriculture and agribusiness remain the leading industries in North Carolina, contributing more than \$84 billion, annually, to the state’s economy. Agriculture and agribusiness also employ more than 17 percent of the state’s workforce and account for about 17 percent of the state’s income.

As a land-grant university, North Carolina Agricultural and Technical State University has an inherent responsibility to offer broad curricula with a blend of liberal and practical education, to conduct basic and applied research in the public interest, and to disseminate scientific and practical knowledge through Cooperative Extension and other outreach programs. When N.C. A&T first opened its doors in 1891, the academic roots of what would later become the College of Agriculture and Environmental Sciences (CAES) were already forming. Today, more than 12 decades later, we still adhere to our land-grant roots of teaching, research and Extension as we concurrently transform the CAES into an interdisciplinary unit that is attracting a larger and more diverse student body. The CAES’s portfolio is strengthened through partnerships and collaborations with other colleges on campus, as well as with stakeholder organizations throughout the state, nation and world.

Our programs in the food, agricultural, family and environmental sciences have continued to grow in the breadth of curriculum- and student-enrollment since the first baccalaureate program was offered in 1918, and the first master’s program — in agricultural education — in 1940. Although there have been many shifts in the CAES’s guiding doctrines over the years, our core principles have always included a commitment to instill a sense of value and purpose in our students, and to vigilantly seek out solutions for pressing social and scientific issues with our Extension activities and research projects.



## Our Vision

The College of Agriculture and Environmental Sciences shall be a premier learner-centered community that develops and preserves intellectual capital in the food, agricultural, family and environmental sciences, through interdisciplinary learning, discovery and engagement.

## Our Mission

The College of Agriculture and Environmental Sciences provides opportunities for individuals from diverse backgrounds to achieve excellence in the food, agricultural, family and environmental sciences, through exemplary and integrative instruction, and through scholarly, creative and effective research and Extension programs.

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# Our Core Values

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## SHARED LEADERSHIP

The CAES values shared governance, responsibilities, and decision-making.

## INTEGRITY & HONESTY

The CAES values trust, honesty and ethical behavior, and our deeds will be consistent with our words.

## RESPECT FOR THE INDIVIDUAL

The CAES values civility among individuals and fosters diverse viewpoints and opinions. Employees strive for daily interpersonal relations that demonstrate commitments to treating all persons with fairness, dignity, caring, quality and compassion.

## COLLABORATION

The CAES values working with a broad range of constituencies to bring synergy and diverse viewpoints to the University. The CAES works hard to forge alliances and equitable partnerships across public and private sectors in pursuit of preparing, finding and implementing solutions.

## DIVERSITY

The CAES values and respects diversity, and works to empower all employees and students to function inclusively and effectively in a multicultural world. The CAES is committed to protecting and advancing the interests of diverse populations and cultures and acceptance of others without biases based on differences of any kind.

## INNOVATION & CREATIVITY

The CAES values and uses science and technology to strengthen and advance the food, agricultural, family and environmental sciences. Critical thinking, inquiry-based learning, scientific knowledge and practical application are hallmarks of the CAES work and programs. The CAES encourages and challenges employees and students to find and implement solutions to existing problems and to create new economic opportunities.

## GLOBAL AWARENESS

The CAES values globalization and encourages staff and students to think globally in preparation for today's fast-moving and ever-changing world, and to serve our constituencies better.

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# Organization

The CAES Strategic Plan was formulated in response to the opportunities and challenges facing the College and the food, agricultural and environmental systems. Eleven themes were captured at faculty summits and information gathering sessions held around the state — involving many external and internal stakeholders and subsequent discussions. The national goals of the United States Department of Agriculture (USDA) were reviewed, North Carolina's particular needs were assessed, and they too were incorporated into the CAES Strategic Plan. Issues identified by all these sources were selected for their significant potential for reciprocating alliances with institutions of higher learning, communities, businesses, foundations and governmental agencies.



**The 11 themes that form  
the matrix for the  
CAES Strategic Plan are to:**

Maintain a responsive learning environment

Attract, retain and graduate outstanding students

Improve minority and environmental health

Ensure a nutritious, safe and secure food supply

Empower individuals, families and communities

Advance biotechnology and biodiversity

Ensure the viability of small-scale agriculture

Protect the environment and natural resources

Promote international trade  
and economic development

Use innovative technologies

Expand our resource base  
and maximize relationships



## THEME 1

# Maintain a Responsive Learning Environment

Learning is what the University is all about. Consistent and effective learning take place only in a nurturing, supportive and responsive environment. The CAES continued to take the steps necessary to build a foundation for learning so that teaching, research, Extension, creative activity and service flourished. The CAES provided interdisciplinary learning experiences to our students by offering high-quality programs to ready them to be competitive in the global job market and to instill good citizenship that embodies strong work ethic and perseverance.



## WHERE WE ARE

- Maintained accreditation for all sanctioned CAES programs
- Developed 97 publications, gave 120 presentations, received three patents, filed applications for an additional 11 patents, submitted 26 invention proposals and created nine new patent concepts
- Received five awards for University Research Excellence and numerous other state and national awards recognizing faculty and staff excellence in respective disciplines
- Surveyed advisory groups and committees and developed programs, activities and events designed to enhance student learning, including the Undergraduate Research Scholars Program, high school summer-enrichment opportunities, and study-abroad and international-exchange programs



## THEME 2

# Attract, Retain & Graduate Outstanding Students



Educating students was the earliest mission of the CAES and remains the most important way that we enhance the future of this state. Instruction is fully integrated with our other divisions — research and Extension. The CAES expects its graduates to become leaders in their professions and communities. To this end, the CAES continued to attract and graduate outstanding students with diverse backgrounds and equips them with the knowledge and skills appropriate for multiple career paths and to meet the challenges of the future.

## WHERE WE ARE

- Developed and implemented a student marketing campaign that increased student enrollment by 15 percent, making the CAES the largest college of agriculture at a Historically Black College and University in the country
- Increased first-year student retention rates by 10 percent, bringing it to 82 percent
- Increased scholarship funding and awards by 50 percent
- Engaged alumni to assist in our recruitment efforts
- Increased the number of community college students enrolled in the CAES by 30 percent
- Increased student opportunities by establishing advanced certificate and online advanced-degree programs and added Western Piedmont Community College as a new distance learning partner
- Developed research-based summer programs that attract high-quality, high-school students from across the state
- Developed an undergraduate student research program and graduated 95 percent of those students, with 90 percent going on to receive graduate/professional degrees

## THEME 3

# Improve Minority & Environmental Health

Disparities in health status and access to health care among minority populations are ongoing public health concerns. Nationally, minority populations, particularly African-Americans, suffer higher rates of

morbidity and mortality. Changes in medical technology, lifestyle adjustments, and environmental protections have not produced equal benefits in racial and ethnic populations. Differences among socioeconomic classes in environmental and occupational exposures are thought to play a key role in health disparities. There is also disproportionate placement of pollution-intensive industries and hazardous-waste sites in low-income and minority communities. The CAES used its expertise and resources to address these concerns.



## WHERE WE ARE

- Developed a community outreach program to educate stakeholders on the benefits of eating healthy and practicing sustainable agriculture
- Hosted, in collaboration with local community health-based groups and organizations, annual health fairs in Guilford County, attracting 350 people
- Collaborated with community- and faith-based organizations, and schools to host the Speedway to Healthy walk-through exhibit of the human body. This teaching exhibit reached 10,000 elementary-age children in 12 counties in its first year.
- Developed and approved a biotechnology certificate program
- Provided outreach to 3,718 adults in eight counties and to 9,755 youth in 15 counties who increased consumption of fruits and vegetables
- Provided outreach to more than 12,000 youth and adults in 15 counties who increased their physical activity



## THEME 4

# Ensure a Nutritious, Safe & Secure Food Supply

Nutrition-related health problems, such as obesity, diabetes, cardiovascular diseases and nutritional deficiencies, are major public health concerns at local, state and national levels. Obesity has reached epidemic proportions and remains the leading cause of osteoarthritis, cancer, hypertension and other preventable diseases. Foodborne illnesses — another preventable destabilization of public health — affect thousands of consumers, annually. The CAES continued to help North Carolina residents ensure the farm-to-fork safety of a nutritious food supply that motivates more North Carolinians to adopt healthy eating habits.



## WHERE WE ARE

- Established a partnership with North Carolina State University and the N.C. Department of Agriculture and Consumer Services to operate and conduct research at the Center for Environmental Farming Systems
- Received funding for three food-safety and security-projects
- Established a spin-off company, Alrgn Bio, in partnership with a Canadian company, to continue peanut allergen research



- Increased partnerships with industries through the Center for Excellence in Post-Harvest Technologies at the North Carolina Research Campus in Concord
- Collaborated with private vendors and the Cooperative Extension Service to offer ServSafe certification training
- Received funding for three food-safety and security projects designed to investigate strategies to enhance access to healthy foods and to identify methods to reduce the incidence of foodborne illnesses

## THEME 5

# Empower Individuals, Families & Communities

Empowerment for individuals, families and communities entails increasing knowledge and skill base, and nurturing behaviors to address daily quality-of-life challenges. These

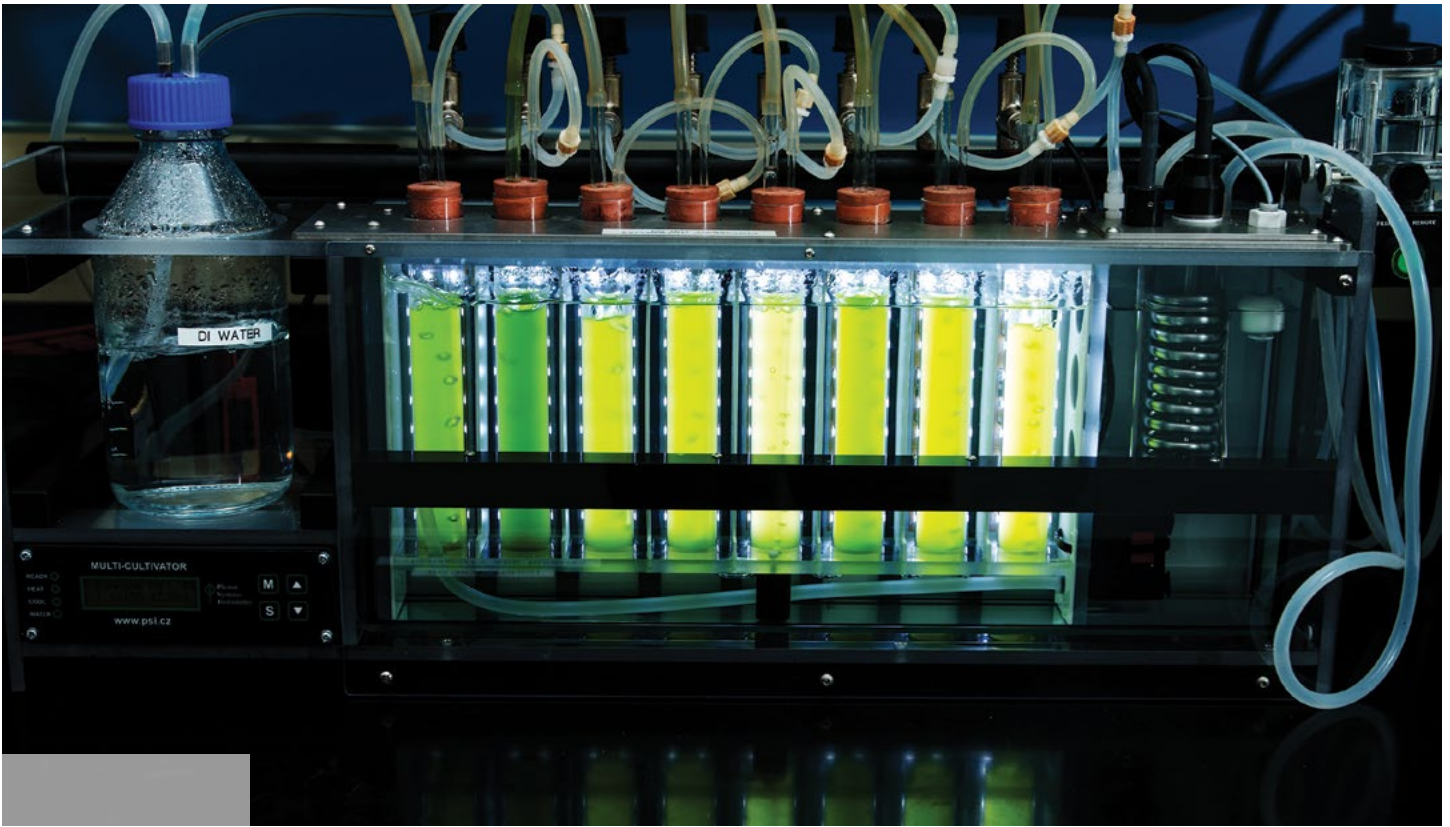


empowerment issues include family financial management, parenting and child development, aging, health, nutrition, personal safety, and workforce readiness. Aligned issues include strengthening community infrastructures — including housing — and leadership development. The CAES used its expertise and resources to support this effort.

## WHERE WE ARE

- Developed, conducted and implemented programs in parenting, financial management, community development, 4-H and STEM, resulting in 1,562 adults adopting positive parenting practices, 13,594 youths increasing STEM knowledge, and 7,100 participants in seven counties developing budgets, assessing and improving their and their families' financial status
- Developed 4-H mentoring programs at the Early College at N.C. A&T, the Early College at Bennett, the Eastern Band of Cherokee Indians, and in Guilford and Wilson counties
- Conducted Community Voices, a community leadership development program, in four communities with 110 volunteers trained
- Established a small-farmer veterans program
- Encouraged civic engagement and service learning through the 4-H program
- Established rural-community leadership programs for undergraduate and graduate students
- Helped 20,389 youth in 16 counties gain employability skills, and 4,843 youth and adults in 15 counties gain entrepreneurship skills. Additionally, 354 people in three counties participated in community organizational development, and 454 people in three counties were trained in community economics, social and environmental sustainability programs





## THEME 6

# Advance Biotechnology & Biodiversity

North Carolina's roadmap for biotechnology and biodiversity — "New Jobs Across North Carolina: A Strategic Plan for Growing the Economy Statewide Through Biotechnology" — shows that the state's biotechnology industry is among the nation's five largest, with more than 180 companies employing 21,000 people and generating

\$4 billion in annual revenue. The CAES used its unique resources and expertise to provide education, to address basic scientific-research issues, and to help position the state to gain economic and social benefits of biotechnology and biodiversity.

## WHERE WE ARE

- Awarded biotechnology certificates to 40 students
- Developed a new undergraduate biotechnology class, and established a master's biotechnology certificate program
- Established a multicultural scholars program with a focus on biotechnology, and awarded student scholarships
- Established a master's program with a concentration in Integrated Health Systems
- Coordinated and collaborated with public- and private-biotechnology agencies, resulting in student internships, professional classroom lectures and student visits
- Hosted a biotechnology competition at the FFA's Middle Grades Rally



## THEME 7

# Ensure the Viability of Small-Scale Agriculture

More than 90 percent of North Carolina farms are categorically small (grossing less than \$250,000, annually). Surviving as a small-scale farmer requires strategies for many perils, in-

cluding marketing, risk management, profitability, knowledge of the technical climate and technology advances, changes in public policy, and resource assessments. Also adversely affecting small farm viability is the length and segmentation of production processes and the forces of nature that affect short-term supply in the face of relatively constant demand. In-depth knowledge of — and research on — this population and the issues they face are central to the CAES.

## WHERE WE ARE

- Trained participants in Cooperative Extension's Beginning Farmer's Program on high tunnel and recovery crops, to increase production and improve profitability
- Conducted annual summer and fall field days at the University Farm demonstrating best-management practices and alternative farm opportunities
- Conducted annual small-farm conferences with educational programs, farm tours and concluding with the annual award of a Small Farmer of the Year
- Organized and conducted the National Goat Conference, which attracted local, national and international farmers and agricultural professionals
- Conducted trainings for farmers on swine, pastured pork, for certifying farmland for organic production and increasing farm profitability, and for Shiitake-mushroom production
- Developed and conducted several farm marketing programs.
- Hosted a networking trip for North Carolina farmers to explore marketing their pork products in travel to China and Canada
- Worked with small farmers on farm-management plans and collaborated with other states and agencies to develop and deliver programs on risk management, and land preservation and management
- Developed and enhanced partnerships with the following agencies: N.C. Department of Agriculture and Consumer Services, on poultry disease and emergency preparedness; The Center for Environmental Farming Systems on beginning farmers, and USDA and rural farm groups and others, on land preservation


## THEME 8

# Protect the Environment & Natural Resources

In addition to growing crops and producing food, agriculture also encompasses the conservation of natural resources and environmental stewardship. Farmers and other North Carolina residents are affected by ground- and surface-water contamination, soil erosion, declining soil quality, and other environmental degradations. The CAES responded to the environmental need by helping develop profitable agricultural systems that protect the environment, conserving the state's natural resources, harnessing renewable resources in new ways, and enhancing rural communities.



## WHERE WE ARE

- Assisted farmers in enrolling more than 2,250 acres of land in conservation easements, farmland-protection programs, and voluntary agricultural districts
  - Worked with 155 landowners that adopted best-management practices for forestry
  - Established a research site on a Montgomery County farm to demonstrate soil-and-water quality and nutrient management
  - Partnered with county staff to conduct workshops on water quality, efficient water use, soil and nutrient management, and soil and nutrient loss
  - Worked with staff at the Natural Resource Conservation Service (NRCS) — Eastern Technology Center to conduct multiple training sessions for small farmers, Cooperative Extension agents, and new NRCS recruits
- 
- Received \$5 million from the National Science Foundation for the Center of Research Excellence in Science and Technology (CREST)
  - Received funding for 16 additional research projects, published 68 peer-reviewed journal articles and numerous student and faculty awards for work in renewal energy and bio-products



## THEME 9

# Promote International Trade & Economic Development

International trade is increasingly important for food and agricultural sectors. In recent years, agricultural exports and

imports have each represented about 12 percent of our national income or gross national product. The inherent opportunities provided by the recent wave of globalization present important opportunities to harness the collective skills of CAES faculty in mitigating international-development challenges in agriculture and related disciplines, such as forestry, engineering, veterinary medicine, health and applied education.

## WHERE WE ARE

- Revised and enhanced classes to include an international and global focus
- Established an exchange program between A&T and Nanjing Normal University (NNU) in China; three international students traveled to A&T to work in a food researcher's lab
- Received funding for 12 proposals totaling \$4 million, for research projects in Cambodia, the Philippines, Honduras, Guatemala, Nepal, Ethiopia, Tanzania and Ghana
- Funded several international faculty/student exchange programs, in Africa, Asia and North America
- Developed seven proposals with international components/implications
- Hosted numerous short visits from post-doctoral visiting scholars
- Collaborated on food-safety research projects with universities in China, Saudi Arabia, Jordan, Iran, Egypt and Malaysia
- Worked with the N.C. Department of Agriculture and Consumer Services to organize small- and limited-resource hog farmers across the state to export swine offal to China
- Collaborated with several African and Asian universities on agroforestry, agricultural policy, ag-business production, and faculty-exchange programs





## THEME 10

# Use Innovative Technologies

The internet, informational, instructional, spatial, environmental and bio-medical technologies are essential to advancements in food, agricultural, family and environmental sciences. These technologies also expand learning choices and methodologies to support timely and lifelong learning. The CAES continued to wholly embrace these innovative technologies and assure that use of them is relevant, appropriate and accessible.



## WHERE WE ARE

- Developed college-wide technology plans that include equipment purchase, training, enhanced use and trade out
- Participated in the University's Academy for Teaching and Learning training sessions to prepare faculty with innovative and appropriate teaching strategies
- Increased online programs in all departments, including two graduate programs and one certificate program



## THEME 11

# Expand Our Resource Base & Maximize Relationships

As the priorities of traditional funding sources shift, it's critical that the CAES seek new sources of funding to

accommodate growth in critical programs and to recruit and retain top-quality employees and students. Tapping into these new funding streams requires targeted and effective marketing of CAES programs and accomplishments. Expanding the resource base, creating an aggressive marketing campaign and strengthening stakeholder relationships is necessary for the CAES's survival.

## WHERE WE ARE

- Increased donations, including new donors, by 300 percent
- Established funding goals for the new CAES Advisory Board, including plans to raise \$500,000 for a student-scholarship endowment and \$45,000, annually, to support a new-faculty start-up fund, for professional development of staff, and to support student travel
- Established a new goal for external grants of \$30 million by 2022 (currently \$21.8 million)
- Received 78 new grants, 10 new contracts, 38 new partnership grants with majority institutions, and signed five new cooperative agreements
- Established 10 new state and national contacts, with such companies as Dow Chemical Co., Land O'Lakes Inc., and the Department of Defense, that led to new organizational and institutional partnerships. These relationships also helped the CAES increase its external funding.
- Hosted national events such as the National Goat Conference, and the NIFA Grantsmanship and Agricultural Educators workshops, which were live streamed and resulted in greater awareness of the CAES and A&T
- Led the organization of the 125th Anniversary of the Second Morrill Act celebrating the establishment of 1890 land-grant institutions. Activities included a Congressional Hearing that featured testimony from Chancellor Harold L. Martin Sr., and a national convocation at the Library of Congress with remarks by an A&T/CAES student
- Continued story/media placement on such research highlights as reduced-allergen peanuts, wheat bran and aspirin replacement, in mainstream daily media and in national science/research publications and blogs



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