



**NORTH CAROLINA  
AGRICULTURAL AND TECHNICAL  
STATE UNIVERSITY**

## 2019 EXECUTIVE SUMMARY

*A&T Preeminence:*

*Taking the Momentum to 2023*

## A MESSAGE FROM CHANCELLOR MARTIN

When several hundred North Carolina A&T alumni and supporters gathered at the Alumni-Foundation Event Center Ballroom to kick off the Campaign for North Carolina A&T on Nov. 1, 2018, few might have expected that the fundraising initiative had already achieved the level of success that it had.

The initial total: \$68 million toward an \$85-million goal.

Ambitious? Yes. Doable? Absolutely. And even more than that, it illustrated where N.C. A&T is as an institution: Ascendant and soaring higher than ever before.

The A&T that many alumni (like me) experienced during our undergraduate and grad school years has changed dramatically and is being further transformed with each passing day. Our fall 2018 enrollment underscored that, as a record 12,142 students flooded into our university, cementing our position as the nation's largest historically black university for the fifth consecutive year.

Our Faculty and Staff of the Future initiative continued to deliver significant results, as extraordinary new deans assumed leadership of our nationally recognized colleges of Agriculture and Environmental Sciences; Arts, Humanities and Social Sciences; and Business and Economics, as well as the Joint School of Nanoscience and Nanoengineering. Together, and with their colleagues at A&T's five other colleges, they are raising the bar of performance at our university and setting new academic standards for the future.

Though we are continuously looking ahead, the conclusion of our school year gave us an opportunity to remember where we came from. Our class of 1969, which was deprived of a proper graduation when civil rights protests and a mobilization of military troops on our campus caused the university to temporarily close, was recognized at spring commencement in front of more than 10,000 graduates, family members, faculty and administrators.

The golden anniversary of the completion of their studies brought more than 100 members of the class back to Greensboro. As those incredible Aggies stood and were recognized with waves of thunderous applause, they brought to mind the timeless words of Sir Isaac Newton: "If I have seen further than others, it is by standing upon the shoulders of giants."

May the outstanding work taking place at our university today cause future generations to look back with pride on the course we charted for them.



Harold L. Martin Sr.  
Chancellor



# 1

## EXCELLENCE IN TEACHING, RESEARCH AND ENGAGEMENT

North Carolina A&T will commit to excellence in teaching, research and student success.



## CULTIVATING MINDS

**VALERIE JARVIS MCMILLAN, PH.D.**, compares her role as a teacher to that of a gardener, using her knowledge, skills and actions to cultivate the minds of students to explore, grow and learn, while equipping those in her care with the necessary competencies to construct their own destiny.

To this belief, McMillan (left), an associate professor in the Department of Family and Consumer Sciences, College of Agriculture and Environmental Sciences, has facilitated and fostered numerous undergraduate and graduate students' successful entry into the early childhood workforce in positions such as teachers, center directors, child development specialists and extension agents.

Over her 25-plus-year career in early childhood education, McMillan has been applauded by students for her dedication to their academic and professional development. In 2019, the University of North Carolina Board of Governors acknowledged her service with its Award for Excellence in Teaching.

McMillan has been a faculty member at North Carolina A&T since 2000. In addition to teaching, McMillan finds time to engage in interdisciplinary initiatives with colleagues within and outside of N.C. A&T. Currently, she is the program coordinator of the M.A.T. Child Development Early Education and Family Studies (Birth-Kindergarten) degree program, interim program coordinator for the M.A.T. Family and Consumer Sciences Education program, and faculty liaison for the Child Development Laboratory.

## 2018-19 U.S. PATENT AWARDS

### **MITCHELL HENKE, PH.D.**

Department of Graphic Systems and Technological Studies  
U.S. Patent No. 10,024,495 - "Folded sheets of material for use as a structural member and assembly thereof"  
Issued July 17, 2018

### **GUOCHEN YANG, PH.D.**, and **ZHONGGE "CINDY" LU**

Department of Natural Resources and Environmental Design  
U.S. Patent No. 10,028,505 - "Micropropagation of Alexandrian laurel"  
Issued July 24, 2018

### **ELHAM FINI, PH.D.**

Department of Civil, Architectural and Environmental Engineering  
U.S. Patent No. 10,077,356 - "Preparation and uses of bio-adhesives"  
Issued Sept. 17, 2018

### **YEOHEUNG YUN, PH.D.**, and **YOUNGMI KOO**

Department of Chemical, Biological and Bioengineering  
U.S. Patent No. 10,128,512 - "Paper-based magnesium battery and the use thereof"  
Issued Nov. 15, 2018



# 2

## INTELLECTUAL CLIMATE

North Carolina A&T will cultivate an intellectual climate that encourages the creative exchange of ideas and raises the quality of the professional environment.

### FOR THE RECORD

Faculty researchers at North Carolina A&T earned \$64.37 million in contracts and grants in 2018-19. A strong majority of the research awards come from the federal sector are competitive in nature and support collaborative and innovative projects. This year's total means N.C. A&T continues to be one of the state's three most productive public research campuses.

Research projects contributing to this record year come from the university's eight colleges and its Joint School of Nanoscience and Nanoengineering, including:

- **MOHD ANWAR, PH.D.**, College of Engineering. With more than 50,000 opioid-related overdose deaths estimated in 2017 in the United States, the opioid epidemic has emerged as a major health crisis. Anwar has been performing computational health research using the Twitter social media platform to study the epidemic. He began collaborating with RTI experts Kevin Conway of the Survey Research Division and Steven Cohen, Division for Statistical and Data Sciences, in fall 2018 to study the extent to which social media data can be harnessed as an indicator of the opioid epidemic nationwide.
- **MANOJ JHA, PH.D.**, College of Engineering; **CHYI LYI "KATHLEEN" LIANG**, College of Agriculture and Environmental Sciences; **LYUBOV KURKALOVA, PH.D.**, College of Business and Economics; **GREGORY MONTY, PH.D.**, College of Engineering; and **LEILA HASHEMI BENI, PH.D.**, College of Science and Technology. The team received a \$750,000 National Science Foundation Dynamics of Coupled Natural

and Human Systems grant to explore factors that contribute to improving food accessibility, while maximizing agricultural production and minimizing negative environmental impacts on the land and water used in food production.

- **ALI KARIMODDINI, PH.D.**, College of Engineering. Karimoddini began a project with the North Carolina Department of Transportation called "Developing a Safe and Cost-effective Flight Control Methodology for a UAV-enabled Bridge Inspection." A&T is a national leader in its autonomy capabilities and infrastructure for control of drones. Two UAV laboratories exist on campus, run by Karimoddini and his colleagues. Both laboratories contain designated flight zones as well as ample floor space for rovers and other robotics exercises.
- **ROBERT NEWMAN, PH.D.**, College of Science and Technology. Newman was awarded \$1.4 million from the National Institutes of Health's National Institute of General Medicine to investigate the biochemical mechanisms underlying oxidation-induced shifts in protein kinase substrate selection and to begin to explore the functional consequences of redox modification on kinase-dependent signaling processes inside cells. Simply put, Newman is researching cellular signaling pathways—how cells know what to do and when to do it.
- **ANDREA OFORI-BOADU, PH.D.**, College of Science and Technology. Ofori-Boadu received an NSF CAREER award expected to total \$559,991. The program is a foundation-wide activity that offers NSF's most prestigious awards in support of early-career faculty like Ofori-Boadu who have the potential to serve as academic role models in research and education and to lead advances in the missions of their organizations. With this award, she will research professional identity development processes in emerging women Architecture Engineering and Construction (AEC) industry students towards informing educational and institutional transformations that strengthen women's persistence in becoming AEC professionals.
- **ALESIA FERGUSON, PH.D.**, College of Science and Technology. Ferguson joined principal investigator Helena Solo-Gabriele, Ph.D., of the University of Miami in the Beach Exposure and Child Health Study, which is funded by the Gulf of Mexico Research Institute. N.C. A&T received \$300,000 of the \$1 million award to explore the effects of petroleum pollution and its impacts on children in the Gulf of Mexico following the Deepwater Horizon disaster in 2010.



## FAR REACHING

North Carolina A&T broke ground on two facilities that were planned with community outreach in mind.

In July 2018, the groundbreaking for the CAES (College of Agriculture and Environmental Sciences) Extension and Farm Pavilion took place at the N.C. A&T University Farm. Funded by USDA's National Institute for Food and Agriculture, the 17,000-square-foot Farm Pavilion will include classroom and meeting spaces, a demonstration kitchen, laboratories and an auditorium. The pavilion is the first phase of \$12.3 million in construction at the farm that signals an expanded area of research, education, community engagement and agribusiness development.

Three months later (October 2018), the university broke ground on the Engineering Research and Innovation Complex (ERIC). In addition to providing much needed space and increasing North Carolina A&T's engineering instruction and research capacities, the facility also will help the university foster partnerships with local and regional industry and create job opportunities that directly benefit the entire community as companies seek to meet the global demands of the future.

## TOWN & GOWN: N.C. A&T AND COMMUNITY CELEBRATE THE ARTS

One of the highly anticipated highlights of the spring semester was the university's inaugural Town & Gown event to recognize and celebrate the relationship between the university and the surrounding Piedmont Triad community.

Hosted by the College of Arts, Humanities and Social Sciences, the Town & Gown brought together community leaders, friends and supporters of N.C. A&T for a red carpet-worthy evening of engagement and artistic expression from talented A&T performing and visual artists that included a special presentation of "Ain't Misbehavin', The Fats Waller Musical Show".



Earlier in the day, master classes in acting, dancing and film directing were conducted by stage and screen actress Loretta Devine, triple threat Jasmine Guy and Oscar-nominated filmmaker Kevin Wilson '11, respectively.

This debut Town & Gown event underscored the relationship between the university and the community in myriad, vibrant ways.

# 3

## PUBLIC SERVICE AND COMMUNITY ENGAGEMENT

North Carolina A&T will elevate and expand public service and community engagement to create a premier educational experience that addresses global needs.



# 4

## STEWARDSHIP, OPERATIONAL EFFECTIVENESS AND EFFICIENCIES

North Carolina A&T will excel in resource stewardship, operational effectiveness and efficiencies.

the power of  
**DO**  
THE CAMPAIGN FOR NORTH CAROLINA A&T™



## THE POWER OF DO

By 2018, North Carolina A&T had been harnessing the power of “DO” for 127 years. The university had made significant progress toward national prominence as a land-grant, doctoral, research institution, enrollment and the caliber of first-year students were at an all-time high, and research faculty had earned over \$64 million in contracts and grants. There wasn’t a better time to advance the university’s reach and recognition than through a capital campaign.

The public phase of the \$85 million Campaign for North Carolina A&T launched Nov. 1, with \$68 million of the goal already raised, including more than 100 major gifts of \$25,000 each.

Set to conclude at the end of 2020, the growing financial support from alumni and friends will help build upon N.C. A&T’s commitment to excellence for its students, faculty, programs and infrastructure.

## NEW STUDENT CENTER

After years of planning and three years of construction, the long-awaited new Student Center opened in September 2018. The facility is LEED Silver-certified and—at 150 thousand square feet—is the largest structure on campus.

The Student Center houses administrative offices, the Offices of Student Activities and Student Development, the Multicultural Student Center, campus bookstore, recreation and gaming rooms, meeting and study spaces, a ballroom, lounge areas, eateries, a convenience store, an ATM and outdoor patios and terraces.

## RESEARCHING DIVERSITY

A collaborative research grant to address underrepresentation of African American and Hispanic/Latinx students in STEM disciplines was awarded North Carolina A&T by the National Science Foundation (NSF) Alliances for Graduate Education and the Professoriate (AGEP) program.

“AGEP North Carolina Alliance: An Institutional Transformation Model to Increase Minority STEM Doctoral Student and Faculty Success” is a five-year, \$761,280 grant led by **KEITH SCHIMMEL, PH.D.**, director of the Applied Science and Technology Program in the College of Science and Technology (CoST). Rounding out the N.C. A&T research team are **ABDELLAH AHMIDOUCH, PH.D.**, dean, CoST; **AJIT KELKAR, PH.D.**, chairman, Department of Nanoengineering, Joint School of Nanoscience and Nanoengineering; and **C. DEAN CAMPBELL, ED.D.**, assistant dean for academic services, The Graduate College.

The team is collaborating with researchers and officials at North Carolina State University and the University of North Carolina at Charlotte to develop, implement and study a model to create institutional, department and faculty change and promote doctoral completion and progression to faculty careers among historically underrepresented doctoral students in STEM disciplines.

Each participating department will have a volunteer faculty member designated as an AGEP-NC Faculty Fellow who receives support and training on mentoring, the experiences of underrepresented minority students and fostering change. Each Fellow will work with their department head, graduate program coordinator and departmental faculty colleagues to understand graduate student pathways, identify practices and policies that promote success, and diagnose trouble spots.

“Our approach to increase minority Ph.D. students who become faculty is to figure out how to develop departmental cultures that are conducive to underrepresented student success,” said Schimmel.

# 5

## DIVERSE AND INCLUSIVE CULTURE

North Carolina A&T will strengthen our campus community by fostering a more diverse and inclusive culture.



# 2018-19 SCORECARD

	GOAL 2023	2017- 2018	2018- 2019
<b>ENROLLMENT</b>			
TOTAL	14,000	11,877	12,142
<b>UNDERGRADUATE</b>			
Online	500	368	409
New transfers	1,500	822	817
Rural (in-state)	2,700	2,356	2,514
Pell (in-state)	5,600	5,162	4,683
<b>GRADUATE</b>			
Online	500	167	194
Master's	2,112	1,070	1,059
Doctoral	1,024	409	401
<b>STUDENT SUCCESS</b>			
<b>UNDERGRADUATE</b>			
First-year retention	85%	78.6%	77.0%
General education course completions	90%	77.6%	79.6%
Graduation and placement			
4-year graduation	40%	25.4%	27.5%
5-year graduation	50%	44.8%	45.0%
6-year graduation	55%	53.0%	51.0%
Degrees awarded	2,100	1,669	1,689
STEM degrees awarded	450	471	512
Degree efficiency	19	18.4	18.0
Gender diff degree efficiency (male graduates)	1.0	17.2	17.2
Rural (in-state)	600	464	441
Pell (in-state)	1,250	1,013	919
Online degrees awarded	TBD	71	108
<b>GRADUATE</b>			
Degrees awarded	750	480	468
Master's degrees awarded	675	423	409
Doctoral degrees awarded	75	57	59
STEM degrees awarded	250	232	208
Online degrees awarded	TBD	59	72
<b>FACULTY</b>			
Faculty student ratio	1:19	1:8	1:18
Full-time faculty	70%	69%	57.6%
<b>RESEARCH AND INNOVATION</b>			
Contracts and grants award dollars (millions)	\$75	\$64.26	\$64.4
Approved patents and licenses	20	6	4
<b>FINANCIAL RESOURCES</b>			
Endowment market value (millions)	\$75	\$60	\$68.4
Alumni participation rate	10%	8%	9.2%
Endowment per student ratio	\$7,500	\$5,183	\$5,452
<b>REPUTATION AND RANKINGS</b>			
U.S. News Best National Universities ranking	185-200	231-300	231-301
U.S. News Best Undergraduate Business Programs ranking	Top 300	381-494	350
U.S. News Best Undergraduate Engineering Programs ranking	Top 100	137	146
Affordability in N.C. public institutions	Top 25%	Top 25%	Top 25%
Diversity (% non African-American)	30%	22.1%	22.1%
<b>ATHLETIC SUCCESS</b>			
Departmental APR (annual)	985	987	TBD
Fundraising (millions)	\$1.20	<\$1	\$1.02



Established in

1891 1890

Land-grant University

Number **ONE**



AMONG PUBLIC HBCUs, **TOP 7** OVERALL

*(U.S. News & World Report's 2019 Best Colleges)*

Number **TWO**



HBCU IN THE NATION

*(BestColleges)*

**DOCTORAL UNIVERSITY:  
HIGH RESEARCH ACTIVITY**

*(The Carnegie Classification of Institutions of Higher Education)*

**17**

CENTERS AND INSTITUTES

**16**

LICENSED TECHNOLOGIES

**7**

START-UP COMPANIES

**12,142 STUDENTS** (LARGEST HBCU IN U.S.)

**1040**  
Average Freshman SAT  
*(Fall 2018)*

**20**  
Average Freshman ACT  
*(Fall 2018)*

**3.61**  
Average Freshman High School GPA  
*(Fall 2018)*

**70k+ ALUMNI**

**2,157**

**DEGREES CONFERRED:**

**1,689 BACHELOR'S**

**409 MASTER'S**

**59 DOCTORAL**

**CARNEGIE CLASSIFICATION FOR COMMUNITY ENGAGEMENT**

**no. 1**

**PRODUCER OF UNDERGRADUATE ENGINEERING DEGREES TO AFRICAN AMERICANS**

*(U.S. Department of Education 2018)*

**MOST AFFORDABLE CAMPUS IN THE STATE**

*(Money Magazine's Best Colleges for Your Money 2018)*

**ALWAYS DOING.  
NEVER DONE.**



## **MISSION**

North Carolina Agricultural and Technical State University advances knowledge through scholarly exchange and transforms society with exceptional teaching, learning, discovery and community engagement. An 1890 land-grant doctoral research institution with a distinction in STEM and commitment to excellence in all disciplines, North Carolina A&T creates innovative solutions that address the challenges and economic needs of North Carolina, the nation and the world.

## **VISION**

North Carolina Agricultural and Technical State University is a preeminent land-grant institution where high-achieving scholars are engaged in transformative teaching and learning, civic outreach, interdisciplinary research and innovative solutions to global challenges

## **CORE VALUES**

Responsibility. Excellence. Integrity.  
Inclusiveness. Learning.

1601 EAST MARKET STREET  
GREENSBORO, NC 27411

[WWW.NCAT.EDU](http://WWW.NCAT.EDU)

North Carolina Agricultural and Technical State University (N.C. A&T) is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award baccalaureate, master's and doctoral degrees. N.C. A&T does not discriminate against any person on the basis of age, color, disability, gender identity, genetic information, national origin, race, religion, sex, sexual orientation, veteran status, or any other basis protected by law. | N.C. A&T is an AA/EEO and ADA compliant institution.