THURSDAY, SEPTEMBER 12, 2019 (Reserved Parking at the Memorial Bell Tower)

10:15 – 11:30 p.m. Buildings and Property Committee
Winslow Hall Conference Room
Jimmy Clark, Chair
Andrews, Carter, Harrell, Poole, Prestage

1:15 – 3:00 p.m. Advancement and External Affairs Committee
Chancellor’s Conference Room (12 Holladay)
Chip Andrews, Chair
Goodnight, Stack, Murphy, Washington, Weisiger

1:15 – 3:00 p.m. University Affairs Committee
Winslow Hall Conference Room
Stan Kelly, Chair
Carter, Clark, Harrell, Poole, Prestage

3:00 – 3:15 p.m. Break

3:15 – 4:45 p.m. Audit, Risk Management and Finance Committee
Winslow Hall Conference Room
Ed Weisiger, Jr., Chair
Goodnight, Kelly, Stack, Murphy, Washington
FRIDAY, SEPTEMBER 13, 2019
DOROTHY AND ROY PARK ALUMNI CENTER

7:30 – 8:00 a.m.  Executive Committee Meeting  TAB 10
Eury Room, Park Alumni Center
Tom Cabaniss, Chair
Clark, Kelly, Goodnight and Weisiger

8:30 – 9:15 a.m.  Dean’s Briefing – Dean Peter Harries, Graduate School

FULL BOARD MEETING
DOROTHY AND ROY PARK ALUMNI CENTER BOARD ROOM

9:00 a.m.  ■ Call to Order – Reading of the State Government Ethics Act
Tom Cabaniss
Chair of the Board

■ Roll Call

■ Approval of Minutes  TAB 1
  ✔ — July 10, 2019, Meeting of the Full Board
  ✔ — July 10, 2019, Meeting of the Closed Session of the Full Board

■ Chair’s Report – Tom Cabaniss  TAB 2
  — Endowment Board Report

■ Chancellor’s Report – W. Randolph Woodson  TAB 3
  — Update of Activities and Topics of Interest to the Board

COMMITTEE REPORTS:
■ Audit, Risk Management and Finance Committee  TAB 4
  Ed Weisiger, Jr., Chair
  On the Agenda: Committee Approvals and Informational Items
  — Review of Committee Responsibilities
  — Review Draft Agenda/Plan of Work for the Year
  — Review Internal Audit Charter and Approval
  — Internal Audit Update
  — Finance/Budget and Legislative Update
  — Enterprise Risk Management and Compliance Update

■ Buildings and Property Committee  TAB 5
  Jimmy Clark, Chair
  On the Agenda: Board, Committee Approvals; Informational Reports
  — Committee Plan of Work for the Year
  — Review of Committee Responsibilities and Procedures

Requires full board approval
**Buildings and Property Committee (Continued)**

- **Property Matters**
- **Disposition by Lease to Tread Happy (or affiliated entity)**
  previously leased retail space at 2010 Hillsborough Street. This property disposition by space lease will provide income for the maintenance and upkeep of the property.

- **Acquisition by Lease** on behalf of the Small Business and Technology Development Center (“SBTDC”), whose existing space lease expires on September 30, 2019, requests a lease for strategic office space, preferably in its current or comparable location, to house its regional offices in Asheville, NC. SBTDC requires space to meet confidentially with business owners in order to counsel and provide entrepreneurs with the tools they need to build.

- **Disposition by easement.** The City of Raleigh has requested an amendment of an existing utility easement to allow for the continuing development of Centennial Campus. A portion of the existing easement along Main Campus Drive will be realigned in length and route to allow the City of Raleigh to operate within existing infrastructure installed by the university. The proposed new easement area will be +/- 1,400 sf ~ 0.321 ac.

- **Disposition by easement.** Duke Energy Progress has requested the Conveyance of a utility easement to install a power line on and for the benefit of the NCSU Butner Beef Cattle Field Lab (BBCFL) property. The power line will run from an existing service line on the BBCFL property to a well located on adjacent property leased by BBCFL. The proposed new easement area will be +/- 5,966 sf ~ 2.74 ac.

- **Disposition by easement.** AT&T has requested the conveyance of an easement for installation of underground fiber optic cable from an existing manhole on Method Rd to a communication room located at 3121 Ligon Street to provide a redundant connection of the 911 circuit between NC State Campus Police and the Wake County 911 Center. The proposed new easement area will be +/- 120 sf ~ 0.0028 ac.

- **Disposition by Demolition.** The College of Agriculture and Life Sciences has requested the demolition of three structures located on West Campus on Ligon Street, due to poor condition of the structures. The structures are as follows the Small Animal Research Building, the Modular Dinoflagellate Facility, and the Aquatic Research Fish Lab.

- **Disposition by Demolition.** The Real Estate Department has Requested the demolition of the Centennial Campus Information Booth located on Centennial Campus at Varsity Drive due to poor condition of the structure.

- Requires full board approval
Buildings and Property Committee (Continued)

- Acquisition by Purchase of +/- 40.99 ac. to be added to the Existing Central Crops Research Station in Wake Co. The College of Agriculture and Life Sciences currently leases the property for the study of weed management.

- Acquisition by Purchase of +/- 12 ac. to be added to the existing Lake Wheeler Field Lab in Wake Co. This property is centrally located within Lake Wheeler Field Lab and will be a strategic acquisition for the university.

- Property Matters (received after full board mailing)
- Designer Selections
  - Interior Renovations Erdahl-Cloyd
  - Jordan Hall Renovation
  - Wrestling Addition and Renovation
  - Dairy Facility-CVM
  - Approval of Designer Selections less than $1M
- Acceptance of Completed Buildings and Projects
- Non-Appropriated Capital Improvement Projects
- Property Matters (Received after Full Board Mailing)
- Site and Plan Review / Approval
  - Varsity Drive Parking Lot
  - Approval of Plans and Specifications less than $2M
- Informational Reports
  - Capital Projects Update

University Advancement    TAB 6
Chip Andrews, Chair
On the Agenda: Board, Committee Approvals; Informational Reports
- Review of Committee Responsibilities
- Review Plan of Work for the Year
- University Advancement Update
- Fundraising and Campaign Report
- Alumni Association Update
- Strategic Brand Management Discussion
- Watauga Medal Nominations Process
- Naming Opportunity Proposals

- Closed Session

University Affairs Committee    TAB 7
Stan Kelly, Chair
On the Agenda: Board, Committee Approvals; Informational Reports
- Review of Committee Responsibilities
- Plan of Work for the year

- Consent Agenda
  - Requests to Continue Centers/Institutes
    - Future Renewable Electric Energy Delivery and Management Systems Center (FREEDM)
  - Designation of Time Limited Option for Distinguished

Requires full board approval
Professorships
— Requests to Confer Tenure
— Fall Enrollment Report
— Student Body President Report
— December 2019 Commencement Speaker
— Provost Update
— 2019-2030 Faculty Salary Ranges
— Closed Session

■ Staff Senate Report
  Janice Sitzes, Chair

■ Items of Interest to Members of the Board

■ Motion to go into Closed Session

✓ ■ CLOSED SESSION

■ Reconvene in OPEN SESSION for Any Additional Items to Come Before the Board

11:00 a.m.* ■ Adjourn

Requires full board approval
The North Carolina State University Board of Trustees met in special session in Winslow Hall’s Conference Room, in Raleigh, NC, on Wednesday, July 10, 2019.

Members present:

Jimmy D. Clark, Chair
Thomas E. Cabaniss
Robert “Chip” Andrews
Stanhope A. Kelly
Ven Poole
Ronald W. Prestage, DVM
Edwin J. “Ed” Stack, III
Dewayne N. Washington
Edward I. Weisiger, Jr.
Emma Carter, ex officio

Chair Jimmy Clark called the meeting to order at 4:30 p.m. He reminded all members of their duty to avoid conflicts of interest and appearances of conflicts of interest under the State Government Ethics Act and inquired as to whether there were any known conflicts of interest or appearances of conflict with respect to any matters coming before the board at this meeting. Chair Clark called on Assistant Secretary PJ Teal for the roll call.

ROLL CALL
Assistant Secretary PJ Teal called roll and certified that a quorum was present.

MINUTES
Mr. Cabaniss made the motion, seconded by Dr. Prestage, to approve the open and closed session minutes of the June 20, 2019 meeting of the full Board. The motion passed.

CHAIR’S REPORT - JIMMY CLARK
Chair Clark welcomed new members Ed Stack and Emma Carter to the Board of Trustees. Then he invited Superior Court Judge Paul Ridgeway to give the Oath of Office. Judge Ridgeway administered the Oaths then excused himself from the meeting.

Chair Clark called upon Trustee Ron Prestage for the nomination and election of officers.

NOMINATING COMMITTEE - CHAIR RON PRESTAGE
Dr. Prestage reported that the nominating committee met on April 19 and recommended a slate of officers for the 2019-20 year. Since then, the UNC code was amended with regard to the election of officers. The amendment in effect as of July 1, 2019. The amendment adds the following language:

At the first regular meeting after June 30 of each year, each board of trustees shall elect from its membership a chair, a vice chair, and a secretary. [See G.S. 116-32] In no event shall officer elections take place before July 1, or before the swearing in of new board members whose terms commence on July 1. Any member of the board is eligible to serve as an officer, regardless of length of service on the board. Elections shall be conducted such that each member of the board, including newly appointed members, can fully participate in the nomination, consideration, and election of officers.

To comply with the amended Code for this year, the Nominating Committee nominated the following slate of officers for 2019-2020:

Tom Cabaniss, Chair
Stan Kelly, First Vice Chair
Ed Weisiger, Jr., Second Vice Chair
Ann Goodnight, Secretary
PJ Teal, Assistant Secretary
He asked if there were any additional nominations. There being none, he made a motion, seconded by Mr. Stack, to approve the slate of officers. The motion passed.

He then made a motion, seconded by Dr. Prestage, for the election of officers. The motion passed to elect the following slate of 2019-20 officers:

- Tom Cabaniss, Chair
- Stan Kelly, First Vice Chair
- Ed Weisiger, Jr., Second Vice Chair
- Ann Goodnight, Secretary
- PJ Teal, Assistant Secretary

After the motion passed, outgoing Chair Clark congratulated Mr. Cabaniss. He passed the gavel to new Chair Tom Cabaniss.

**CHAIR'S REPORT – TOM CABANISS**

Chair Cabaniss thanked the Board for electing him as Chair of the Trustees for the next year. He said he will strive to have the Trustees build upon the university's past successes and expand its future opportunities for success. With the Trustees' help, a positive legacy can be created for future generations of NC State students. He stated that though we face some challenges, this is going to be an exciting year, and he cannot wait for them to get started.

Chair Cabaniss addressed the revisions to the Board of Trustees by-laws. These revisions were necessary to provide clarification and to be consistent with changes from the Board of Governors.

He noted that the Board received a copy of the proposed changes at least seven days prior to this meeting, in compliance with the by-laws, and have had the time to review them.

Mr. Cabaniss made a motion, seconded by Mr. Clark, to approve the Board of Trustees By-laws revisions. The motion passed.

Chair Cabaniss reported that each year the ACC requires University Board of Trustees to certify that the authority for the Administration of Intercollegiate Athletics has been delegated to the Chancellor. Mr. Cabaniss made a motion, seconded by Mr. Weisiger, to approve the ACC Governing Board Certification for 2019-20, the motion passed.

**CHANCELLOR’S REPORT- RANDY WOODSON**

Chancellor Woodson provided a brief legislative update. The university is scheduled to receive $80 million over four years from the State Capital and Infrastructure Fund for a $160 million integrative sciences building.

Chancellor Woodson gave an update on year-end numbers. This is the third year that the University has had greater than $200 million in new gifts. The endowment reports are good - research has received more than $500 million dollars in gifts. He stated that he would provide more details in September when numbers are finalized. He thanked the Trustees for their service on the Board. He is looking forward to working alongside them this year and helping NC State build on its current momentum.
COMMITTEE REPORTS

UNIVERSITY ADVANCEMENT AND EXTERNAL AFFAIRS COMMITTEE – CHAIR STAN KELLY

Mr. Kelly reported that the Committee reviewed and approved a revision to the Watauga Medal Policy 01.30.03. The revision added further clarification to the nomination, recommendation and approval process for Watauga Medal recipients.

Mr. Kelly made a motion to approve Policy 01.30.03: Watauga Medal. The motion passed.

Mr. Kelly reported that the Committee received a University Advancement update that included year-end fundraising results, status of the Think and Do the Extraordinary Campaign and next steps with the University Advancement strategic plan project.

Mr. Kelly noted that the Committee approved six naming opportunity proposals, including four for the College of Agriculture and Life Sciences, three of which are for the Dairy Education Center and Creamery and one for the Plant Sciences Building, one naming for the College of Engineering and one for the College of Veterinary Medicine.

He also stated that the committee met in closed session and approved six naming agreements and that a motion will be made at the end of this meeting to go into Closed Session to consider all naming proposals.

UNIVERSITY AFFAIRS COMMITTEE – ACTING CHAIR TOM CABANISS

Chair Cabaniss reported that under the Consent Agenda, the Committee approved the following items:

- designation that a Distinguished Professorship may be awarded on a time-limited basis and;
- conferral of tenure to three new faculty members who will begin employment this fall.

Chair Cabaniss reported that the Committee recommended approval of the following four academic program requests:

- The addition of an online delivery option to the Master of Management degree program, effective fall 2020.
- A change in degree title from the B.S. in Plant and Soil Sciences to the B.S. in Crop and Soil Science – this will align the degree title with the department’s name and better distinguish it from the B.S. in Plant Biology.
- Discontinuation of the B.S. in Soil and Land Development - the two concentrations within the program will be merged into other degree concentrations in the college.
- Discontinuation of the B.S. in Extension Education – this stems from perennial low enrollment; however, currently enrolled students will be allowed to complete the program as planned.

Chair Cabaniss made a motion, on behalf of the University Affairs Committee, to approve the four academic programs requests. The motion passed.

He reported that the Committee also recommended revisions to two policies for full board approval:

- 04.25.05 – Equal Opportunity, Non-Discrimination and Affirmative Action Policy. Revisions have been made to include a definition of sexual harassment and to simplify parts of the policy to make it more easily readable.
- 04.20.02 - Alcohol Policy. Changes respond to recent amendments to North Carolina legislation authorizing the sale of alcoholic beverages in athletic facilities and at certain special events.
Chair Cabaniss made a motion, on behalf of the University Affairs Committee, to approve the revisions to the two policies. The motion passed.

Chair Cabaniss reported that Provost Arden informed the Committee of six new certificate programs and reviewed information pertaining to the 2019-2020 faculty salary ranges.

Chair Cabaniss noted that in closed session, the Committee approved a Dean’s appointment. The Committee also recommended an emeritus status request which will be considered by the Full Board in closed session at the conclusion of this meeting.

CLOSED SESSION

With no further business in open session, Mr. Clark made the motion, seconded by Mr. Andrews, at 5:00 p.m. to go into closed session to prevent the premature disclosure of an honorary award and to consult with our attorney in order to preserve the attorney client privilege. The motion passed.

RECONVENE IN OPEN SESSION

At 5:15 p.m., the Board came out of closed session. With no further business in open session, Chair Cabaniss adjourned the meeting at 5:18 p.m.

Respectfully submitted,

_______________________              _____________________
Assistant Secretary    Secretary

Approved:

_______________________
Chair of the Board
NORTH CAROLINA STATE ETHICS COMMISSION

SAMPLE
ETHICS AWARENESS & CONFLICT OF INTEREST REMINDER
(to be read by the Chair or his or her designee at the beginning of each meeting)

In accordance with the State Government Ethics Act, it is the duty of every [Board] member to avoid both conflicts of interest and appearances of conflict.

Does any [Board] member have any known conflict of interest or appearance of conflict with respect to any matters coming before the [Board] today?

If so, please identify the conflict or appearance of conflict and refrain from any undue participation2 in the particular matter involved.

Rev. 1-16-07

1 N.C.G.S. §138A-15 (e): “At the beginning of any meeting of a board, the chair shall remind all members of their duty to avoid conflicts of interest and appearances of conflict under [Chapter 138A].” There is no set language required by the Act. Specific language can and should be tailored to fit the needs of each covered board as necessary.

2 “A public servant shall take appropriate steps, under the particular circumstances and considering the type of proceeding involved, to remove himself or herself to the extent necessary, to protect the public interest and comply with this Chapter, from any proceeding in which the public servant’s impartiality might reasonably be questioned due to the public servant’s familial, personal, or financial relationship with a participant in the proceeding.” See N.C.G.S. §138A-36 (c). If necessary, the Chairman or individual member involved should consult with his ethics liaison, legal counsel, or the State Ethics Commission to help determine the appropriate response in a given situation.
The Chancellor’s Report  
September 2019

New Partnerships
NC State University and North Carolina Central University are partnering to identify drug development research leads faster. The partnership brings together the distinct but complementary assets of NC State’s Comparative Medicine Institute (CMI) and NC Central’s Biomanufacturing Research Institute and Technology Enterprise (BRITE). While BRITE already has the state-of-the-art technology and a number of skilled researchers, NC State will provide experts in chemistry and biology who help drive the system to reach its full potential. The partnership is expected to not only produce results in identifying new drug targets, providing expertise for in-vivo proof-of-concept studies, and collaboration on new funding opportunities, but will also open doors for student training at both institutions.

Research Project Headquarters Moving to NC State
The Interregional Research Project No.4 (IR-4), a federally funded research program that helps specialty crop growers receive the pest control agents they need to grow their crops, announced its plans to move from its center of operations at New Jersey Agricultural Experiment Station/Rutgers University to NC State. With the multitude of talented faculty members at NC State researching all aspects of specialty crop production, the number of pest management companies in North Carolina, and the importance of specialty crops in our state, the IR-4 Project Management Committee voted unanimously to move its headquarters to our university.

NC State Hosts AHEAD Virtual Conference
NC State recently hosted a virtual conference with presentations from the annual Association on Higher Education and Disability (AHEAD) “Equity and Excellence: Access in Higher Education” conference. The presentations reinforced to NC State faculty and staff the importance of creating an accessible campus environment so that students with disabilities can achieve their academic goals and succeed beyond higher education.

Student Success
Four NC State students were recently selected to receive the prestigious Benjamin A. Gilman International Scholarship to study or intern abroad during the fall of 2019. The Congressionally funded Gilman Program provides scholarships to outstanding undergraduate students who might not otherwise be able to study abroad due to financial constraints. Since the program’s establishment in 2001, over 1,300 U.S. institutions have had more than 28,000 Gilman scholars who represent the rich diversity of the United States to 145 countries around the globe. The four recipients are: Cheyana Bassham, a junior in the College of Natural Resources; KC Chaleunvong, a freshman in the College of Sciences; Zach Helon, a junior in the College of Humanities and Social Sciences; and Toinette Powers, a junior in the College of Humanities and Social Sciences. They will conduct their semesters abroad in Tanzania, Poland, Estonia and Spain, respectively.
Faculty Success

Three NC State researchers were named recipients of the 2019 Presidential Early Career Award for Scientists and Engineers (PECASE). PECASE is the highest honor bestowed by the United States government on outstanding scientists and engineers who are beginning their independent research careers and who show exceptional promise for leadership in science and technology. Lorena Bociu, an associate professor of mathematics, conducts research on the biomechanics and hemodynamics in the lamina cribrosa, a structure in the eye, to better understand the cause and progression of glaucoma with the ultimate goal of finding new ways to prevent or treat the disease. Hsiao-Ying Shadown Huang, an associate professor of materials science and engineering, investigates the mechanics of biological materials and energy materials, with her research on the effects of strain on heart valve tissue being the first of its kind. Her work has implications for increased understanding of tissue processes, including tumor growth and the formation of thrombi – clots that remain in the blood vessel. James LeBeau was the third recipient. This was his last award as an NC State researcher, since he recently accepted a faculty position at the Massachusetts Institute of Technology.

Erin Krupa, assistant professor of mathematics education at NC State, was awarded a five-year $2.1 million National Science Foundation (NSF) grant in July for her research project, “Validity Evidence for Measurement in Mathematics Education.” She aims to create a repository of validity evidence for quantitative measures in mathematics education, which will improve what is known in the field of mathematics education in relation to student and teacher outcomes, thereby improving the quality of instruction students receive. Krupa received another NSF grant in June, measuring $450,000, for her project “Using Animated Contrasting Cases to Improve Procedural and Conceptual Knowledge in Geometry,” which aims to help students better understand the theory behind the mathematics concepts they are learning.

Wolfpack Investor Network Success

The Wolfpack Investor Network (WIN) has reached $10 million in investments into 18 university-affiliated companies since its launch in December of 2016. The companies span industries such as food science, medical devices, advanced materials, and therapeutics, and all carry strong ties to NC State. WIN is a vital piece of the entrepreneurial ecosystem at NC State, providing university-affiliated investment opportunities and a vast network of alumni, parents, and friends of the university for its investor members.

Athletics

The College Swimming Coaches Association of America named 28 men and women on the Wolfpack Swimming and Diving team Individual Scholar All-Americans. Additionally, both the men’s and women’s squads were recognized as Scholar All-America Teams for the 2019 spring semester by achieving a team GPA of 3.0 or higher. This honor is a testament to their hard work in the classroom and in competition.
Accomplishments Report | July 2018-June 2019
Randy Woodson, Chancellor of North Carolina State University

Strategic Planning

Goal 1: Student Success

While balancing access with quality, NC State must ensure that our students make timely progress toward an NC State degree, and along the way, must provide educational opportunities that inspire them to lead, to serve, to challenge, to take responsibility, to build problem-solving skills, and to engage with complex problems.

- NC State granted 3,400 students degrees on December 19, 2018 during the fall commencement exercises. 3,449 degrees were awarded – 40 associates, 1,959 bachelor’s, 1,103 master’s and 347 doctoral degrees. In May, 5,915 degrees were awarded (96 associate, 4,018 bachelor’s, 1,692 master’s, and 319 doctoral degrees), bringing the total number of NC State degrees conferred in the 2018-2019 academic year to 9,364.

- NC State remains a top choice among college hopefuls, with freshman applications hitting an all-time high of 30,537 and transfer applications reaching 4,048.
  - This year we offered admission to 13,345 freshmen – less than half (43.7%) of this year’s freshmen applicants. This is the lowest admit rates dating back to at least fall 2002. For the admitted students, all academic measures are higher or even with last year. They represent 44 countries, all 50 states, and 98 North Carolina counties. 54% of the admitted freshmen are women. We expect to enroll 4,750 freshmen in Fall 2019.

  - NC State offered acceptance letters to 1,285 transfer students. They were very strong academically and represent a wide range of backgrounds, socioeconomic statuses, racial and ethnic diversity, and geography. Admitted transfer students represent 79 of North Carolina’s 100 counties, 31 states, and 11 countries. They come from 15 UNC System Schools and 48 of the 58 North Carolina community colleges. Half of our admitted transfers are from North Carolina community colleges.

  - In its second year, the Spring Connect program enrolled 476 students for spring 2019. That cohort was very diverse and included 232 students from Tier 1 and Tier 2 designated North Carolina counties. Approximately 350 new students are expected to enroll through the Spring Connect program in January 2020.

- Our students continue to impress and received a number of prestigious scholarships. This year’s awards include the Marshall Scholarship, Truman Scholarship, Goldwater Scholarship, Udall Scholarship, Fulbright Student Grants, Gilman Scholarships, Critical Language Scholarships, Boren Scholarships, Knight-Hennessy scholarships, Hollings Scholarships, and National Science Foundation (NSF) Graduate Research Fellowship.
recipients, among others. Here are snapshots of some of these outstanding student achievements:

- Madison Maloney and Ziad Ali, both Park Scholars in the Class of 2019, received 2018-19 Astronaut Scholarships. This award was given to 50 students from 36 universities across the U.S.s who demonstrated great skill in and dedication to STEM fields and intend to pursue research or advance their field upon completion of their final degree.

- Maloney and Ali were also named Knight-Hennessy Scholars this year. The Knight-Hennessy program offers full funding for graduate programs at Stanford University. It is a relatively young program – only 2 years old – but it is as competitive as some of the more established scholarship programs for post-graduate studies.

- The Fulbright U.S. Student Program awarded two NC State students and two recent graduates grants for study/research projects or English Teaching Assistant Programs. Zachary Campbell, a doctoral student in Chemical and Biomolecular Engineering, won a study/research grant to France. Alexander Wall, a 2019 graduate of the Department of Biological Sciences, won a study/research grant to Germany. Paul Nolan, a 2017 graduate from Materials Science and Engineering and Political Science, won an English Teaching Assistantship to Norway. Chloe Shevlin, a 2018 graduate from Industrial and Systems Engineering, won a study/research grant to the United Kingdom.

- The Fulbright Canada Killam Fellowships program also awarded freshman Anthropology major Kees Koopman a fellowship to explore anthropology and linguistics at McGill University in Montreal. Koopman will spend his sophomore year in Canada and return to NC State in the 2020-2021 academic year.

- Four NC State undergraduates with a passion for research won prestigious Goldwater Scholarships, placing them among the nation’s most promising young scientists and engineers. Our recipients are: Neil Baugh, a junior studying Materials Science and Engineering with a minor in Biotechnology; Rachel Chen, a sophomore pursuing a degree in Statistics; Nikhil Milind, a sophomore double majoring in Genetics and Computer Science; and Ana Sofia Uzsoy, a sophomore double majoring in Physics and Computer Science with a minor in Music. This highly competitive scholarship, awarded to 496 college sophomores and juniors, provides up to $7,500 per academic year to cover tuition, fees, books, food and housing.

- The National Science Foundation awarded its prestigious Graduate Research Fellowship to 14 NC State students. The fellowship program recognizes outstanding graduate students in NSF-supported science, technology, engineering and mathematics disciplines who are pursuing research-based masters and doctoral degrees.

- Federico Scurti, a Ph.D. candidate in the Department of Materials Science and Engineering, won a Lemelson-MIT Student Prize for his work in enabling applications of high temperature superconductors (HTS). The Lemelson-MIT National Collegiate
Student Prize Competition is a nationwide search for the most inventive individual graduate students and undergraduate student teams. Federico’s inventions are designed to detect and prevent HTS failure, which could lead to a new generation of environmentally friendly and high-efficiency transportation systems. They are patented and licensed to the startup company Lupine Materials and Technology. The U.S. Navy, U.S. Air Force, and Department of Energy have all expressed interest in its technologies.

- The Foundation for Food and Agriculture Research (FFAR) announced 17 inaugural recipients of the FFAR Fellow award, among whom were NC State graduate students Lindsey Becker, Alison Deviney, and Camilo Parada Rojas. The program provides fellows with the resources they need to carry out research in the areas of food and agriculture, and to transition smoothly into the workforce.

- Ten College of Veterinary Medicine Students are among the winners of the 2019 Zoetis/Association of American Veterinary Medical Colleges scholarships. These scholarships are awarded based on academic excellence, leadership, financial need, and diversity. About 300 students across the U.S. receive the $2,000 grant scholarship each year. 54 CVM students, including this year’s 10, have been awarded the scholarship since 2015.

- A class College of Design students was invited to attend the 2018 Venice Biennale architecture exhibition and present the work of their advanced architecture studio class in Airport Design. The group projects were honored by the European Cultural Centre with the Architecture University Project Award. This award recognized the project for its contribution to research, for highlighting the significance of airport space, and for valuing the experiential journey. The project models were on display through November 2018 in Venice at the Time Space Existence exhibition hosted by the European Cultural Centre.

- We enhanced student success by improving student-facing services with better and faster service, expanded options, and lower costs. We managed university infrastructure and financial resources in the best interest of student academic success, socialization and well-being, and safety. Many of our units employed student interns to provide hands-on, real-world work experience to strengthen students’ academic experience and ensure career-ready graduates.

  - We improved the Witherspoon Student Center and had record utilization of Talley Student Center including growth in fine arts and live performances open to the NC State community.

  - We used on-line meal plan signups to make it easier to enroll in meal plans, and incorporated the Tapingo food-ordering app for ‘grab and go’ at campus dining locations.

  - Organizational realignment within several operational and administrative units such as Campus Enterprises allowed us to increase student employment and provide a
career pathway for students as supervisors, with better work experience, management skills, and higher salaries; making NC State a great place for student employees.

- Operational units such as Facilities engaged in a variety of student-intensive sustainability efforts including facilitating nearly 30 high-impact learning experiences for students and providing real-world experiences for nearly three dozen students who worked with the Sustainability Office. Program activity this past year included NC State Stewards, the university’s leadership program; and co-hosting Make-a-thon, a sustainability innovation competition that engaged 127 students and several corporate sponsors around various sustainability innovation challenges.

- We also sought to support student success through generating funding for scholarships.
  - Of the $35.9 million in endowment spending for fiscal 2019, approximately $10.8 million was devoted to scholarships in addition to crucial financial support for faculty excellence programs. The amount for endowment spending for fiscal 2020 is increasing to an estimated $44 million.
  - We used a portion of the rebate generated from PCard program revenues to provide $500K in annual grants to the Pack Promise scholarship program; deriving student-specific benefits from the university’s accounts payables processes.
  - Student scholarships stemming from trademark and licensing revenue have grown exceptionally, nearing the half-million dollar mark, thanks to royalties from branded consumer products such as Howling Cow ice cream. We recorded exceptional growth in trademark and licensing revenues at a time when ACC peers and nationwide trends saw declining revenue.

Goal 2: Scholarship and Research
NC State’s research culture permeates every aspect of our essence as a university. It structures our thought, informs our teaching, and directs our engagement beyond the campus. It is the foundation on which we build an innovative learning environment that engages our faculty, undergraduates, and graduate students alike. NC State’s research quality determines our impact on the work force, on the economy, on the advancement of knowledge, and on the human condition.

- NC State fields an impressive array of faculty who received notable awards such as the Langmuir Lectureship Award, the Sloan Research Fellowship, NSF CAREER Awards, the Champion of Science, SMT Champion Award, the Fulbright Scholar Award, the Excellence in Teaching Award, the Library of Future Award, and the National Academy of Sciences Prize, along with many others. Here are snapshots of some of our recipients:
  - Veronica Augustyn, an Assistant Professor of Materials Sciences and Engineering, was awarded a 2019 Sloan Research Fellowship in Chemistry. She is fifth NC State faculty member to receive this honor. This award provides Augustyn $70,000 to continue her impressive work on the electrochemistry of materials.
In the College of Veterinary Medicine, Ke Cheng was awarded an American Heart Association grant for research into repairing damage caused by heart attacks. The $300,000 Transformational Project Award funds Cheng’s study exploring heart failure’s impact on the reparative ability of stem cells, which can lead to more effective therapies for heart disease.

Four of our NC State faculty members were recently named fellows for the American Association for the Advancement of Sciences, joining 412 other scientists to be honored this year.

- Ilse C.F. Ipsen, Professor of Mathematics
- C.T. (Tim) Kelley, Drexel Professor of Mathematics
- Jennifer Kuzma, Goodnight-North Carolina GlaxoSmithKline Foundation Distinguished Professor in Social Sciences and co-director of the Genetic Engineering and Society Center
- Louis A. Martin-Vega, Dean of the College of Engineering

NC State now claims 27 faculty as members of National Academies, with one new member this year: Rodolphe Barrangou, the Todd R. Klaenhammer Distinguished Scholar in Probiotics Research in the department of Food, Bioprocessing, and Nutrition Sciences, was elected to the National Academy of Sciences in fall 2018. Barrangou was also elected to the National Academy of Engineering in February of 2019.

NC State researcher Manuel Kleiner, was one of nine scientists nationwide selected to receive a prestigious New Innovator Award from the Foundation for Food and Agriculture Research. The award advances the careers of highly creative new scientists who bring innovative, groundbreaking thinking to bear on problems facing food and agriculture. Kleiner studies microbial communities, and the award will further his research into the microorganisms that inhabit the intestinal tract.

Eleven NC State faculty members received NSF CAREER awards this past year. The Faculty Early Career Development Program offers the National Science Foundation's most prestigious awards in support of junior faculty who exemplify the role of teacher-scholars. To win a CAREER award, faculty must be producing outstanding research and education, and demonstrating the integration of education and research within their institutions.

Thomas Barrie, Professor of Architecture, was awarded the 2018-2019 Association of Collegiate Schools of Architecture (ACSA) Distinguished Professor Award. Since the inception of the Association of ACSA Distinguished Professor Award in 1984, eight College of Design faculty have received this prestigious honor, more than any other school. The award recognizes sustained creative achievement in the advancement of architectural education through teaching, design, scholarship, research, or service.

Sylvia Blankenship, Professor Emerita of CALS’ Department of Horticultural Science and retired Associate Dean, was one of 148 academic inventors elected to the
National Academy of Inventors in 2018. In the 1990s, she and former NC State professor Edward Sisler created and characterized a compound known as 1-methylcyclopropene (1-MCP), which makes fruits and flowers last longer on the shelf. John Dole, a horticultural scientist and CALS' associate dean for academic programs, said, “1-MCP is probably the most significant advance in technology for fresh fruits and floral products in the last 20 years.”

- Lee Stiff, Associate Dean for Faculty and Academic Affairs for the College of Education, was recently awarded the 2019 National Council of Teachers of Mathematics Lifetime Achievement Award. He has written several mathematics textbooks for elementary, middle school and high school students. The award honors him for his dedication and service to the field of education.

- Walt Wolfram was inducted into the American Academy of Arts and Sciences. Wolfram, a William C. Friday Distinguished Professor in the College of Humanities Arts and Social Sciences, was presented with this prestigious honor because of his life-long dedication to the field of linguistics. He is considered a pioneer in the fields of social and ethnic dialects and one of the world’s leading scholars in African American English. Furthermore, Walt has spent a significant amount of time studying the different dialects of North Carolina and his extensive research has made our state the most linguistically mapped state in the U.S.

- Tom Raney, Professor of Horticulture Science, was honored with the Scott Medal. This award recognizes contributions to the field of gardening and science. Raney is part of the Mountain Crop Initiative Lab that has introduced over 50 new cultivars to the field of horticulture science. Another point of pride for Raney and his team is their self-created type of hydrangea, called Invincibelle. $1 dollar from each sale of the pink hydrangea is donated to the Breast Cancer Research Foundation. The sales have currently raised over $1 million dollars for breast cancer research.

- Additionally, NC State staff have been recognized as exceptional leaders in their fields and for significant contributions to NC State:
  - NC State had three staff members win the 2018 Governor’s Awards for Excellence, an all-time high for NC State. This shows the caliber of NC State’s faculty and staff.
    - Dane Johnston from the College of Veterinary Medicine
    - David Josephus from Finance and Administration (University Architects Office)
    - David Setser from Finance and Administration (Design and Construction Services)
  - Director of Investments Libby George received the prestigious Rodney H. Adams Endowment Management Award from NACUBO for outstanding individual contributions to professional development activities in the area of college or university endowment and investment management. George worked with faculty from the Poole College of Management to develop case studies and course curriculum, ensuring graduates developed hands-on investment experience.
Randy Lait, Senior Director of Hospitality Services, was awarded the International Foodservice Manufacturers Association “Silver Plate Award” for his service to the NC State Dining program. This is the highest recognition in Lait’s field, and one of the top awards in the food service industry.

University housekeeping staff received the national Green Seal certification for environmentally safe cleaning services, the first university in North Carolina and sixth in the U.S. to earn this rigorous certification.

Campus Enterprises received the 2018 Employer of the Year from the City of Raleigh Mayor’s Committee for Persons with Disabilities.

NC State’s faculty and staff continue to set a high standard for the quality of research supported by the university. Here are some of this year’s notable projects and research grants:

- Ruoying He, Goodnight Innovation Distinguished Professor in the Department of Marine, Earth, and Atmospheric Sciences, received a major grant from the National Academies of Sciences, Engineering and Medicine. The Gulf Research Program awarded $2.1 million to fund his research understanding physical processes that control ocean circulation in the Gulf of Mexico. His project will focus on using advanced assimilative modeling and analyses to understand Loop Current and Loop Current eddy separation dynamics and could have implications for major storm prediction.

- Freya Mowat, Assistant Professor of Ophthalmology in the College of Veterinary Medicine, received the prestigious National Institutes of Health Mentored Research Career Development Award in support of her work developing new treatments for animal and human eye diseases. The four-year, $640,000 grant supports clinician-scientist Mowat’s long-term career goals in comparative ophthalmology and molecular genetics, particularly her focus on developing treatments for blindness caused by age-related macular degeneration.

- Jagdish Narayan, John C.C. Fan Family Distinguished Professor in the Department of Materials Science and Engineering, has developed a new technique that converts carbon fibers and nanotubes into diamond fibers at ambient temperature and pressure in air using a pulsed laser method. The conversion method involves melting the carbon using nanosecond laser pulses and then quenching, or rapidly cooling, the material. These diamond fibers could find uses in nanoscale devices with functions ranging from quantum computing, sensing and communication to diamond brushes and field-emission displays.

- Researchers Sean Lund, Rachael Hall, and Gavin Williams have developed an artificial enzymatic pathway for synthesizing terpenes in E.coli. This shorter, more efficient, cost-effective, and customizable pathway transforms E. coli into a factory
that can produce terpenes, which are naturally occurring molecules that are useful in industries ranging from pharmaceuticals and cosmetics to food and biofuels.

- NC State researchers have developed a technique that uses bacteria to produce “biocement” in coal ash ponds, making the coal ash stiffer and easier to store, and limiting the risk of coal ash spills into surface waters. Coal ash is produced by coal-fired power plants and is often stored in ponds. If the walls of these ponds fail, they can spill coal ash into nearby surface waters – as happened in the wake of Hurricane Florence in 2018, in Virginia’s Dan River in 2014, and in Tennessee in 2008. These spills can have significant consequences, because coal ash contains contaminants such as mercury and arsenic.

- A study on a new treatment for a leading cause of equine reproductive loss led by the College of Veterinary Medicine’s Scott Bailey is one of just a handful of projects receiving the latest funding from the Grayson-Jockey Club Research Foundation. Bailey, Associate Professor of Theriogenology (the veterinary branch focused on reproductive medicine), is heading one of the eight research studies nationwide receiving support from the organization this year. The one-year grant will support Bailey’s exploration of the best antibiotic approaches to treat pregnant mares with ascending placentitis, a bacterial infection of the placenta, and to improve foal survival.

- Knowing the importance of recruiting and retaining excellent faculty, we improved the faculty search process, implemented a revised relocation policy, and streamlined several aspects of the faculty hiring process to improve outcomes. We improved HR reporting capabilities to better track and assess employee retention and turnover trends.

- We also ensured construction, repair and renovation projects were designed, built and maintained to provide faculty with excellent research, classroom and collaboration space. We implemented the Integrated Priority List as a transparent tool for strategic campus resource prioritization to promote highest and best use of resources in line with the university’s strategic plan.

Goal 3: Interdisciplinary Scholarship Addressing Grand Challenges

The history and mission of NC State call for us to address the major challenges that confront the world. Addressing complex problems with many disciplinary aspects requires assembling teams of scholars with varied skills and diverse perspectives. We maximize the impact of NC State’s research by concentrating resources in areas where we have strategic strengths and by creating a culture of collaboration and interdisciplinary work that enriches not only our research activities, but also our teaching and engagement.

- In fiscal year 2017, NC State research expenditures exceeded $500 million for the first time in the university’s history, increasing to $509.8 million by the end of fiscal year 2018. We expect the 2019 research expenditures to be of the same magnitude or larger.
  - In fiscal year 2019, NC State researchers and research administrators submitted 3,234 projects valued at $1.358 billion in total funding requests.
NC State received $372.9 million in extramural research awards, to be dispersed over multiple years to 2,655 projects.

This year, the Proposal Development Unit (PDU) supported the development and submission of 66 large-scale, interdisciplinary-team proposals. These proposals resulted in $100 million in awards – over the life of the projects – with another $263 million requested still pending.

- A portion of new faculty have been hired into clusters under the Chancellor’s Faculty Excellence Program (CFEP), a key driver of enhancing interdisciplinary scholarship at NC State. All of the clusters leverage existing strengths and have the potential to establish NC State as a national leader in their respective fields. CFEP’s strategic investments have attracted top faculty and graduate students from North Carolina and around the world, generated partnerships with government and industry, and garnered millions of dollars in external research funding. Since the program’s inception in 2011, more than 70 new CFEP faculty have been hired for clusters. The CFEP website (facultyclusters.ncsu.edu) has the latest information on cluster achievements so the public can learn about the real-world challenges being researched, the diverse individuals involved, and their accomplishments.

- NC State’s research commercialization and startups continue to be a differentiator for the university. This year, NC State saw a record-breaking 21 startups launch based on NC State intellectual property. The Association of University Technology Managers ranks NC State No. 2 for licenses and options executed, No. 5 for invention disclosures, and No. 4 for startups launched among all US universities without medical schools.

- As a Research I Institution, NC State’s faculty, staff and partners are constantly engaging in interdisciplinary scholarship that has far-reaching implications. Here are snapshots of some of these important research projects:
  - Researchers from NC State and the University of Arizona have identified a gene associated with a common cause of dilated cardiomyopathy, a fatal genetic heart disorder regularly found in Doberman Pinschers. The disease affects the heart muscle’s ability to contract, leading to congestive heart failure or sudden death in adult dogs. Humans with dilated cardiomyopathy have the same grim prognosis. The researchers’ findings could lead to new therapies for both dogs and humans.
  - Researchers from North Carolina State University, the University of North Carolina – Chapel Hill, and Arizona State University have developed a system for “tuning” powered prosthetic knees, allowing patients to walk comfortably with the prosthetic device in minutes, rather than the hours necessary if a trained clinical practitioner tunes the device. Normally, a human practitioner works with the patient to modify a handful of parameters, which can take hours. The new system relies on a computer program that makes use of reinforcement learning to modify all 12 parameters. It allows patients to use a powered prosthetic knee to walk on a level surface in about 10 minutes.
o Gustavo Machado, an Assistant Professor of Emerging and Transboundary Diseases at the College of Veterinary Medicine, is leading an international research team with colleagues in Brazil. The team has developed a mathematical model to predict the amount of people who could potentially develop visceral Leishmaniosis. This disease is fatal to 90% of people if left untreated. Brazil is ranked second in the world for prevalence of the disease and is home to 95 percent of the total occurrences in the Americas. Machado’s new method will allow the Brazilian Ministry of Health to be able to better map at-risk human populations in each Brazilian municipality and could be adapted to help track and analyze the disease in the different regions of their country.

o Researchers at NC State and the U.S. Army’s Combat Capabilities Development Command Chemical Biological Center have developed a new coating for textile fibers, which shows promise for capturing toxic industrial chemicals and chemical warfare agents under real-world conditions. The new coating also captured ammonia gas, a commonly produced industrial chemical in the U.S. They also developed functional textiles that neutralized a blistering agent simulant. This technology could lead to improved masks and personal protective equipment for soldiers and others at risk of exposure.

o Researchers from NC State and the University of Texas at Austin have developed a technique for detecting types of malware that use a computer system’s architecture to thwart traditional security measures. The new detection approach works by tracking power fluctuations in embedded systems, meaning that users can identify the presence of malware within a system and begin the next steps of identifying the type of malware for removal.

o NC State and Stanford University researchers are partners on an open-source computer software program that could lead to reduced readings of contaminants when sequencing microbial samples for microbiomes of interest. The project, called Decontam, identifies the frequency of contamination in samples by using statistical analysis. The methods currently used are time-intensive and expensive, while this new method can be used to reduce the amount of contamination quickly and efficiently. This software identified and eliminated contaminant microbes from the sample, reducing the number of sequencing reads derived from contaminants by 99 percent.

o The College of Veterinary Medicine’s global health program is collaborating with the Institut Pasteur Dakar (IPD) in Senegal to advance infectious disease research in West Africa. Based in Dakar, Senegal’s capital, IPD is a nonprofit organization jointly managed by the Senegalese government and the Pasteur Institute in Paris. The institute serves as a major biomedical research center for West Africa, tackling public health challenges ranging from malaria to virus outbreaks. They want to collaborate with CVM to utilize their expertise in specific research areas to build a foundation for sustainable research and train their students and researchers in practical techniques.
- NC State was named a top Fulbright producing institution in the category of research institutions for the second year in a row and the third time in four years. NC State tied for 4th place for 2018-2019 with eight scholars participating in the program and traveling to host universities all over the world.

- After the IBM Q Hub announcement in May 2018, NC State has been hard at work to support the first university-based IBM Q Hub in North America. This year, Daniel Stancil was named the executive director and Patrick Dreher was named the hub’s chief scientist. The hub has also established a research-and-education advisory committee, made of faculty across several colleges, to enhance our quantum activities. The hub has already begun to develop and offer courses and programs to support the university’s foray into quantum computing. NC State researchers are also publishing and ramping up the university’s reputation in the quantum community. Lex Kemper received $542,000 in NSF funding in the applied quantum computing domain, and there are several proposals still pending — including a $25 million proposal to NSF.

- We are excited for the progress made on realizing the Innovation District on Centennial Campus, an innovation ecosystem to support student, faculty and corporate research partnerships. In collaboration with numerous and diverse campus stakeholders and aligned with the long-standing vision for Centennial, we created a Concept Plan for the Innovation District and are close to finalizing agreements with development partners.

- We transitioned the operation and management of Centennial Campus Technology Incubator to HQ Raleigh to maximize efficiencies and transform the incubator into a larger, financially sustainable enterprise able to support creation of an active innovation and entrepreneurship ecosystem on Centennial Campus.

Goal 4: Organizational Excellence

NC State’s standard of excellence applies to all faculty and staff and to all departments, institutes, centers, and units. Achieving excellence requires constant attention, self-assessment, inclusion, and the courage to change and adapt.

- In the spring of 2019, the Graduate School and NC State celebrated 125 years of awarding graduate degrees. The first master’s degree was awarded in 1894 to Frank Theophilus Meacham. Meacham supported NC State for decades after his graduation, making significant contributions through his involvement in the alumni association and as the superintendent of a test farm in Iredell County run jointly by NC State and the North Carolina Department of Agriculture.

- NC State is the largest producer of doctoral graduates in mathematics education in North Carolina and the fifth largest producer of doctoral graduates in mathematics education in the nation, according to a new independent report published in the February 2019 edition of the Notices of the American Mathematical Society. Additionally, the College of Education is North Carolina’s largest producer of educators licensed to teach STEM subjects in K-12
NC State was featured in the 2019 *Diverse: Issues in Higher Education* rankings. The list highlighted the top 100 institutions awarding bachelor’s, master’s, and doctoral degrees to African American, Asian American, Native American, and Hispanic students across all disciplines.

NC State has begun to implement an enterprise-level research administration software system. The working name of the licensed software is the Research Enterprise Data (RED) system. This is a university-level project sponsored by the Offices of Research and Innovation, Finance and Administration and Information Technology. The system will provide researchers and administrators with tools to streamline the research administration process and deliver accurate, detailed and timely information about projects while ensuring adherence to contractual and regulatory requirements. By simplifying the process of competing for research funding opportunities and tracking research projects and activities, the RED system will increase faculty and researcher productivity. As of June 30, 2019, “Animal Care and Use” – one of the seven modules within the system – has been successfully launched on campus. The remaining modules will be deployed using a phased approach, with projected completion in 2021.

In September of 2018, NC State was one of 96 recipients of the 2018 *INSIGHT* Into Diversity Higher Education Excellence in Diversity (HEED) Award. This is the university’s third HEED award, which nationally recognizes NC State for its commitment to diversity and inclusion across campus.

NC State also relaunched the “Accessibility Excursion” on campus to raise awareness about campus accessibility and to address accessibility barriers. The project was a joint effort between the Office of Information Technology, Student Government, Office for Institutional Equity and Diversity, Disability Resource Office, Facilities Division, Campus Wellness and Recreation, and University Housing.

NC State improved IT security by expanding our Identity Management system, requiring two-factor authentication for all employees and soon for all students, heightening campus awareness, administering required IT Security training for all employees, implementing new data security standards, and continuing to pursue the objectives of the new cyber security strategic plan.

NC State is committed to compliance at all levels. As part of this commitment, we performed a number of risk assessments across the university, including:

- a HIPAA risk assessment of NC State’s covered entities: Counseling Center, Student Health Services, Sports Medicine, Psychoeducational Clinic, and Diagnostic Teaching Clinic. Risks were identified and a project team including both business and technical stakeholders was formed to work through the remediation,
- The Gramm–Leach–Bliley Act (GLBA) risk assessment for Financial Aid to make sure its operations are in compliance, and
- A risk assessment of the Cashier’s Office to ensure compliance.

- The Princeton Review has ranked NC State on its 2018 “Top 50 Green Colleges” list. The university scored a 96 of a possible 99 points, ranking it in the top 50 for the first time in school history. The Princeton Review cited many of the university’s sustainability efforts, including sustainability focused degree programs and extensive alternative transportation options.

- NC State Alumni Association Magazine and marketing team brought home 10 CASE District III Awards.
  - Magazine Awards: Best Articles of the Year (“Welcome to Camp Low ‘n’ Slow”) – Special Merit; Magazine III – Special Merit; Magazine/Table Improvement III – Award of Excellence; Periodical Design (Spring 2018 issue) – Special Merit; Editorial Design (“The CRISPR Whisperer”) – Special Merit; Illustration-Interior Spread (“In the Long Run”) – Grand Award; Illustration-Interior Spread (“You Were Here”) – Award of Excellence; Photography-Series (“The Cost of Living”) – Grand Award
  - Marketing Awards: Mobile Application-Utility/Service (NC State App) – Award of Excellence; Marketing/Branding Video (Holiday 2017 Video) – Special Merit

- The pursuit of organizational excellence is a driving factor in administrative and financial operations across the university, with continual process improvements focused on strengthening university-wide resource planning; streamlining procedures, operations, and financial processes; implementing new technology; and improving reporting. Goals are to better serve students and faculty, reduce costs and risks, quicken processes and build NC State’s reputation as a great place to work. Examples include University Human Resources reorganization, development and implementation of its new strategic plan, and employee development initiatives including:
  - Completion of Phase I roll-out of Management Essentials to strengthen employee productivity and expertise, improve retention and enhance the workplace environment. Nearly all non-faculty managers from across the university (1400+) attended the two-day training sessions. Planning and implementation for similar faculty training is currently underway.
  - Development and launch of mandatory Additional Compensation training provided to more than 300 employees within a 30-day span.
  - Hosting of the second annual HR Professionals Conference focused on (organizational) agility and was attended by nearly 200 campus HR professionals.
  - With EH&PS, updated and clarified personnel policies related to adverse weather and/or other emergency conditions at the university (REG 04.20.07, Enhancements to Adverse Weather Policy for Mandatory and Non-Mandatory faculty and staff).
- The Cashiers Office, with Registration and Records and Financial Aid, began the operations of the Student Services Center in Harris Hall to better serve students through a one-stop shop, serving as model for several UNC institutions exploring this approach for their student facing financial offices; streamlined student financial services and improved customer service within existing staff positions.

- From the top down, Facilities created and implemented a formal safety campaign to promote a culture of workplace safety entitled “No One Gets Hurt – Go For Zero.”

- We improved transportation services to address campus flow and to prepare for future parking needs due to aging parking decks and construction of new buildings. Availability of LimeBikes/Scooters on campus continues, to enhance mobility without adding to the parking burden. A new license plate reader system was implemented to improve customer service, better assess parking demand and enhance enforcement ability.

- Finance is considered a leader within the UNC System in the adoption of new financial management technology to streamline internal processes, reduce financial risk and grow revenue in administrative areas that are not typically revenue producing such as Purchasing and Accounts Payable.
  - Implemented automated tools and process improvements within the Travel Department to quicken PO/invoice processing.
  - Implemented a vendor compliance software for timely and accurate debarment verification.
  - Implemented a new Purchasing Contract Portal, a fully integrated electronic contract authoring, review and signature system, moving the contract review process from a manual, paper driven process to a fully automated process integrated with the university financial system and document imaging system.
  - Began implementation of Paymode-X, the largest B2B electronic payment network, allowing NC State to mitigate fraud risk, reduce labor-intensive management of supplier data and earn dividends.
  - Improved investment operations to yield stronger results and continued clean audits.

- With a continual focus on campus safety, Emergency Management & Mission Continuity (EMMC) published integrated maps that identify defibrillators on campus. EMMC developed an Emergency Tracking Tool and reorganized the Emergency Operations Plan to facilitate coordination and participation of emergency support function partners on campus. Student interns have been involved in this effort.

- Facilities continued to implement Grounds Going Green (3G) and other sustainable and environmentally sound efforts to reduce resource consumption and pollution across campus. 3G has been implemented at the Point and is underway at the Gregg Museum, with efforts to use pet friendly fertilizers in lieu of chemical based products, increase native plantings to
reduce water needs and use electric-powered grounds equipment to reduce noise and air pollution.

- The Office of Real Estate and Development, along with the Office of General Counsel, worked diligently with NC DOT to reduce the footprint of the proposed I-440 widening through Centennial Biomedical Campus, the Brickhaven complex and the USDA research complex, thus lessening the impact to university-controlled property and operations.

Goal 5: Engagement and Partnerships

As the world has changed, NC State’s reach has expanded beyond our borders and across the globe, challenging us to be locally responsive to the needs of our community and our state while globally engaged in solving the grand challenges facing our global community.

- NC State’s startups add $1.2 billion annually to the state’s economy. In the past five years, NC State has had more than 1,000 invention disclosures, 350 patents issued, 975 new patents filed, 700 commercialization agreements, and more than 170 startups and spinoffs.
  - Of the 29 startups created in the UNC System in Fiscal Year 2018, 20 came from NC State.
  - Locus Biosciences announced a $818 million collaboration deal with J & J Innovation to develop CRISPR crPhage precision therapeutics.
  - Tethis Inc., a leading biomaterials company, acquired $17.6 million in funding.
  - ImagineOptixs received $9 million in funding to develop breakthrough optics technology.

- NC State and HQ Raleigh continue to expand their partnership with HQ Raleigh taking over management of a newly expanded incubator, co-working and innovation space in the Partners I building on Centennial Campus. The new HQ @ Centennial consists of 21,000+ square feet including a mix of private suites, conference rooms, classroom space, an open meeting and cafe area, and a makerspace, and will also house NC State’s Entrepreneurship Garage. The visually impressive space is designed to foster innovation while giving student entrepreneurs the opportunity to mix and interact with owners and supporters of start-ups who are members of North Carolina’s largest entrepreneurship co-working community. This move reinforces the relationship between NC State and HQ Raleigh, as their continued support and presence provides great opportunities for NC State students.

- To help with food insecure students on NC State campus, there are have been several community-based and student initiatives.
  - Feed the Pack Food Pantry: The pantry is a year-round, campus accessible resource that supplies healthy snacks and nourishing meals to those students in need. They are located at University Honors and Scholars Commons and are always open to donations to help serve those who are food insecure.
  - More in My Basket: This initiative connects students to the Supplemental Nutrition Assistance Program (SNAP), a program providing low-income students access to fruits and vegetables, bread and grains, and meats and dairy.
Pack Meal Share: This program is for students facing short-term food insecurity, including those using Supplemental Nutrition Assistance Program benefits. Students can donate guest meals from their meal plans using a web-based program to help those who find themselves temporarily without food options. Students donated 3,000 meals in less than a year to support other students. University Dining also contributed a pool of meals to the program to get it started.

- NC State hosted the University Industry Demonstration Partnership’s (UIDP) 2019 Conference, securing presenting partners Duke, University of North Carolina-Chapel Hill, and RTI International and nine other industry or government sponsors. The largest UIDP conference to date, 350 attendees attended the three-day event on Centennial Campus. The conference exposed an international audience to NC State’s unique assets and leadership in public-private partnerships.

- NC State also hosted the University Global Partnership Network (UGPN) annual conference in April 2019 as the consortium’s signature event. Over 40 delegates from across the network joined 70 NC State faculty and staff to focus on research in areas of One Health and Global Health, Big Data and Data Science, Smart and Sustainable Cities, and Innovation and Entrepreneurship.

- The Wolfpack Investor Network (WIN) membership increased from 131 to 147 this year. The WIN members have invested a record $10 million in funding into 18 startup companies since December 2016. The number of current WIN members who have invested in a WIN portfolio company is 108 (up from 75 in 2018).

- There are currently 14 public-private manufacturing institutes in the National Network for Manufacturing Innovation (NNMI). NC State is directly involved in eight of the 14 institutes — the most of any university in the country. The Office of Research and Innovation supports interactions with all eight of the NC State teams that are part of the NNMI — PowerAmerica, Advanced Functional Fabrics of America (AFFOA), Advanced Regenerative Manufacturing Institute (ARMI), America Makes, National Institute for Innovation in Manufacturing Biopharmaceuticals (NIIMBL), Digital Manufacturing and Design Innovation Institute (DMDII), Smart Manufacturing Innovation Institute (CESMII), and Rapid Advancement in Process Intensification Deployment (RAPID) — and plays significant leadership roles in PowerAmerica and NIIMBL.

- An online teacher licensure program from NC State and the University of North Carolina - Chapel Hill will help fulfill the state’s need for licensed elementary and special education teachers thanks to a generous grant from the State Employees’ Credit Union Foundation. The $200,000 grant will create new training modules in the existing Pathway to Practice NC online licensure program, allowing teachers to work towards specialized licensures in either elementary education or special education. The grant also provides scholarships for 10 North Carolina teachers to complete the online training. The state has experienced consistent teacher shortages in both special education and core subject elementary education for years.
• NC State is continuing to focus on increasing accessibility to higher education for the people of North Carolina.
  o NC State was awarded a $1 million grant from the North Carolina GlaxoSmithKline Foundation to be used to fund scholarships, staffing, and programming over the next three years. As a result of the grant, two more community colleges (Robeason and Sampson Community Colleges) were added to the C3 program.
  o The College of Education announced a dual enrollment program with Johnston County Public Schools and Johnston County Community College, slated to begin in Fall 2019. The students will earn their Associate in Science degree from Johnston County Community College and then come to NC State to earn their bachelor’s degree and gain additional teacher preparation skills. While at Johnston County Community College, NC State’s College of Education will be involved by providing academic advisors and co-teaching opportunities.
  o The new Transfer Services Center website (transfer.ncsu.edu) went live in Fall 2018. Designed for prospective and enrolled transfer students, the website pulls together information from the entire campus serving as a single resource for all information relating to transfer students. Information about the admissions application process, orientation and other transition activities, transfer credit and student success resources are all linked on this site.
• The College of Education was also awarded a three-year, $1.2 million grant that will connect fifty underrepresented high school students from rural North Carolina with engineering students at NC State. Through the e-mentoring process and use of technology, the College of Education will help these students pursue STEM related career fields in the future. The program allows NC State students to make a difference in the community, NC State researchers to conduct groundbreaking work that changes the way educators teach, and high school students to learn more about STEM and higher education.
• NC State has cultivated some incredible partnerships during the 2018-2019 academic year and all of them are important to advancing our research and service missions. Partnerships of particular note include:
  o We announced a five-year partnership with Novozymes through the College of Agriculture and Life Sciences. Novozymes is a biotechnology company from Denmark with a North American headquarters in Franklinton, NC. They are the world’s top producer of enzymes, ranging from enzymes for laundry detergent to biofuels.
  o We cultivated a three-year collaboration with Infosys, a global leader in consulting, technology and next-generation services, to help prepare the workforce of the future in data science by advancing employee education and skills development. NC State expert faculty will provide training for Infosys employees in foundational data science skills such as statistics, data visualization, machine learning and programming in Python. Over the next three years, at least 150 new Infosys employees are expected to participate in the joint program, which launched this year on NC State’s Centennial Campus.
• The Smithfield Foundation, which is the philanthropic arm of Smithfield Foods, Inc., announced a $200,000 donation to NC State’s Soldier to Agriculture Program (STAP). This program provides career-introductions and hands-on training to help veterans make the transition from military service to agricultural careers, North Carolina’s top industry. The donation will provide a full year of funding for the partnership between STAP and the Fort Bragg military base career center, which will allow for the construction of larger facilities and upgraded classrooms to recruit veterans and house agricultural courses and studies.

• The Center for Environmental Farming Systems, a partnership of NC State, NC A&T, and the NC Department of Agriculture and Consumer Services, recently received $1.1 million from the Appalachian Regional Commission to develop sustainable infrastructure for local and regional food systems in Western North Carolina.

• The NC State Wolf-Pack-n-Give program was recognized at the Raleigh Environmental Awards. They won the category for waste reduction. The Wolf-Pack-n-Give program provides crates for students to donate gently used dorm furniture, supplies, clothes and non-perishable food. These crates are placed outside of residence halls during the last few days of the spring semester and strive to help reduce the amount of waste that ends up in landfills.

• NC State’s alumni are also making a powerful impact on our local and global communities through their own careers. Recent achievements include:
  o NC State College of Engineering alumnus Craig Lewis Cloud was named the U.S. Ambassador to the Republic of Botswana. Cloud earned his B.S. in Electrical Engineering from NC State in 1986 and credits his degree with helping him adapt to and thrive in his career of Foreign Service. During his career, Cloud has served in senior leadership positions in Afghanistan, India, The Kingdom of eSwatini (formerly known as Swaziland) and the Democratic Republic of the Congo. In his new position as Ambassador, Cloud’s primary role is to implement the United States’ foreign policy and development goals in Botswana, which include reducing barriers to trade, ensuring the sustainability of the Okavanga Delta region and supporting our global health security agency to eliminate HIV.
  
  o Christina Koch, a three-time graduate of NC State, is a NASA Astronaut and launched into space on March 14. She received bachelor’s degrees in physics and electrical engineering as well as a master’s in electrical engineering. She is currently aboard the International Space Station as a flight engineer. Initially, Koch was scheduled to return to Earth in October of 2019, but her mission is now extended to February of 2020, which will set a record for the longest spaceflight by a woman in space history.

• The activation of Centennial Campus is attracting students, faculty, staff and corporate partners to outdoor concerts, Food Truck Rodeos, outdoor recreation programs at Lake Raleigh, and the Centennial Campus Wellness Series.
  o Collaboration partners included the NC State Arts department, NC State’s Gregg Museum, North Carolina Art Museum and City of Raleigh.
In the spring of 2019, we hosted four free, live music concerts along the shore of Lake Raleigh featuring North Carolina bands.

Future plans include a Friday night outdoor cinema series (Fall 2019).

**Advancement**

- We have made significant progress on the Think and Do the Extraordinary Campaign. As of the end of the fiscal year, we have raised $1.53 billion. This places NC State within $70 million of the campaign goal with over two years left in the Campaign.

  - Giving toward the Campaign has created nearly 1,900 new funds. These funds have allowed NC State to create more than 550 new endowed scholarship and fellowship funds and more than 80 new endowed faculty positions.

- Gifts and new commitments totaled $220 million, making fiscal year 2018-19 our third consecutive $200 million-plus year at NC State.

- Planned gift commitments to NC State totaled $52,270,585, representing an increase of nearly $17 million over the previous year and 32% over the three-year average.

- One of this year’s most notable gifts from Fred E. Wilson Jr., a ’61 College of Textiles alumnus, and the Wilson family. In Fall 2018, NC State and the Wilson family announced a $28 million naming gift for the College of Textiles. Wilson has taken great strides in the textile industry as he carried on his family business, Piedmont Chemical Industries, and helped the industry flourish in the United States. This generous endowment has provided tremendous support for scholarships, fellowships, faculty, and equipment within the Wilson College of Textiles, which will allow NC State to secure its place as the leading textiles program in the country.

- Gifts have come from 86,000 donors representing all 100 counties in North Carolina, all 50 states and 66 countries. The highest fundraising totals in our university’s history have been achieved the past two fiscal years, and we are on track to have our third consecutive $200 million-plus year in fiscal year 2018-19.

- On March 27, 2019, NC State launched its first ever Day of Giving, and it was a phenomenal success. The collaborative, university-wide effort raised $13,692,984 million from 10,810 gifts in a 24-hour period to benefit all areas of the university. Of the 6,727 donors who participated, 2,367 were new first-time donors.

- In addition, the endowment value continues to grow, reflecting a $1.4 billion market value as of June 30, 2019. The fiscal-year performance for the NCSIF was approximately 7.3%, exceeding the benchmark of 6.7%

- The Alumni Association Outreach team continued to provide outstanding engagement support to the Think and Do the Extraordinary Campaign, including visiting 30 cities in North Carolina and across the country:
North Carolina events were held in Asheville, Elizabeth City, Charlotte, Greensboro, Kinston, Morehead City, New Bern, Washington, Wilmington and Yadkinville.

Outside the state, events were hosted in Atlanta, GA; Austin, TX; Bluffton, SC; Charleston, SC; Columbia, SC; Denver, CO; Hilton Head, SC; Hollywood, FL; Los Angeles, CA; Miami, FL; Myrtle Beach, SC; New York, NY; Palm Beach, FL; Pittsburgh, PA; Portland, OR; San Francisco, CA; Seattle, WA; Tampa, FL; and Washington, DC.

Facilities

- NC State has made significant progress on Fitts-Woolard Hall, a $137 million project to build the fourth engineering building on Centennial Campus. Fitts-Woolard Hall broke ground in April 2018, and in December 2018 we held a “topping off” ceremony when the highest beam of the building was put into place. Fitts-Woolard Hall is on schedule to open in summer 2020.

- The NC State Plant Sciences Building is a $160.2 million project to create a highly collaborative and interactive environment where the College of Agriculture and Life Sciences can build interdisciplinary partnerships with government, industry, and regulatory agencies to address the grand challenges of agriculture, agribusiness, and plant research. Work began on site this year with a formal groundbreaking ceremony planned for September 2019. We anticipate completion in spring 2022.

- Work continued on the development of a new one-stop academic support space – the D.H. Hill Academic Success Center. This will bring together the University Tutoring Center, academic coaching, drop-in advising, career counseling and the Undergraduate Research Office. The project includes the complete renovation of the second and third floors of the bookstacks towers and a new open stairwell connecting these floors with the Ask Us lobby. In addition to the DASA Academic Success Center spaces on the second floor, new Libraries spaces will include an Innovation Studio, an enlarged and upgraded Visualization Studio and a Dataspace. The Hillsborough Street Entrance to D.H. Hill was re-opened this summer after nearly 20 years and will remain opened even after the project is completed.

- The Wellness and Recreation Center is also on track and will add 20,000 square feet of fitness space; create new recreation space that will include state of the art climbing center, wellness space, and a teaching kitchen; and serve as a centralized hub of wellness and recreation on campus.

- NC State also had a number of important naming ceremonies this year to honor important aspects of our university’s history. These namings included:
  - The University College Commons was renamed Holmes Hall in honor of NC State’s first African American graduate, Irwin Holmes. In the fall of 1956, Holmes along with three other students became the first African American undergraduates at NC State. Holmes was also among the first African American student-athletes to compete within the ACC and the first to serve as captain of a Varsity team. In 1960, he graduated with a degree in Electrical Engineering.
The arena inside Reynolds Coliseum was renamed to commemorate the success of Jimmy Valvano, former NC State men’s basketball coach and athletic director. The ceremony in December 2018 honored Valvano’s lasting legacy at NC State.

**Legislative, Policy and Advocacy**

The following were achieved during the 2018 Short Session of the North Carolina General Assembly:

- Faculty Recruitment and Retention Fund $3 million in FY 2018 (of the $14 million appropriated to the UNC System)
- Repairs and Renovations Reserve of $3,902,793 (of the $32.4 million appropriated to the UNC System)
- Funds for NC State’s participation in the National Institute for Innovation in Manufacturing Biopharmaceuticals ($2 million in fiscal year 2018)
- Food Processing Innovation Center housed at the NC Research Campus in partnership with the College of Agriculture and Life Sciences (2017 appropriations can be used for equipment supplies and other operating expenses)
- NC Clean Energy Technology Center $266,000 non-recurring
- Center for Marine Sciences and Technology (CMAST) to fund Shellfish Pathologist position recurring funds of $125,000 recurring

**Rankings and Recognition**

- Among U.S. universities without medical schools surveyed by the Association of University Technology Managers, NC State ranks in the top five for technology licensing and startup companies launched.
- In the Center for Measuring University Performance’s 2017 report on the Top American Research Universities, published in fall 2018, NC State was ranked among the top 50 among all universities in the following categories:
  - Total Research (#45)
  - Faculty Awards (#14)
  - PhD Graduates (#33)
  - Post-doctoral Research Associates (#40)
- The *U.S. News and World Report* ranked NC State #80 nationally and #32 for public schools.
  - #37 in most innovative schools
  - #43 for undergraduate teaching
  - #46 for programs designed for military veterans
  - Poole College of Management Jenkin’s Professional Online MBA program ranked #17 (fifth year in a row that the program has placed in the top 20 MBA programs)
  - Our Undergraduate Engineering Program rankings improved:
    - Online Engineering Degree Programs #8
NC State Leadership in Public Sector online degree program #58 (up from #71)

- *Money* Magazine ranked NC State 31 out of 727 colleges in the U.S. on its “Best Colleges for Your Money 2018” list. We are the highest ranked North Carolina college on the list, and one of only two to break the top 50.

- *Kiplinger’s Personal Finance* ranked NC State 9th in Best Value for In-State Students Among Public Colleges and 7th in Best Value for Out-of-State Students Among Public Colleges.

- For the first time in the university’s history, NC State was on the 2019 *Times Higher Education* World University Ranking’s list of best colleges for education degrees. We ranked #92 in the world.

- NACUBO recognized NC State as the 9th fastest growing endowment among the 100 largest in 2018. NC State moved up in rank from #94 last year to #88 this year.

**Athletic Excellence**

- NC State had its second-highest finish in the Director’s Cup this year, finishing at 26. This marks three-consecutive Top 30 national finishes for the Wolfpack, improved from #89 in 2010.

- Key competitive achievements from this year included:
  - Thirteen teams finished in the Top 25 of their respective sports, including three teams in the Top 10. This is the highest number of teams that we have ever had finish in the Top 25. Nineteen of 23 teams competed in NCAA Championship competition.
  - Four team conference championships: Women’s Cross Country (ACC), Men’s Swimming & Diving (ACC), Women’s Swimming & Diving (ACC), Wrestling (ACC).
  - Claimed 24 individual conference titles associated with 23 student athletes (2 men’s swimming relay titles, 3 men’s swimming individual event titles, 3 women’s swimming relay titles, 8 women’s swimming individual titles, 1 gymnastics title, 3 wrestling titles)
  - Five Head Coaches of the Year:
    - Braden Holloway – ACC Men’s Swimming & Diving Coach of the Year (5th straight year receiving this recognition)
    - Laurie Henes – ACC Women’s Cross Country Coach of the Year and USTFCCCA Southeast Region Cross Country Coach of the Year
• Rollie Geiger – USTFCCCA Southeast Region Cross Country Coach of the Year

• Kim Landrus – EAGL Head Coach of the Year

• Simon Earnshaw – ACC Women’s Tennis Head Coach of the Year

  o Team-specific highlights include:
    o Women’s Cross Country won their third consecutive ACC Championship and achieved a fourth-straight NCAA Top 15 finish. Men’s Cross Country finished 11th at the NCAA Championship. This is the first time both men’s and women’s cross country teams finished in the Top 15 since 2003.

    o Football finished with a 9-4 record, winning 9 games in back-to-back seasons for the first time since 1991-92, and only the third time in school history.

    o Women’s Swimming & Diving won their second ACC championship in the last 3 years and finished as the No. 7 team at the national meet for the second time in three seasons.

    o Men’s Swimming & Diving won its fifth conference championship in a row and the program’s 29th overall conference title as it took first place at the 2019 ACC Championships. The team then went on to secure its fourth consecutive team trophy with a fourth-place finish at the national meet.

    o Wrestling won back-to-back ACC regular season titles for the first time since 2002, then went on to win the ACC Tournament. The team finished 17th at the NCAA tournament for a record six-straight Top-20 NCAA finishes.

    o Women’s Basketball had the best start in program history (21-0), the longest winning streak in program history (21 games), a second straight trip to the Sweet 16, and a third consecutive top-four finish in the ACC.

    o Baseball had a historic 19-0 start to the season, which propelled the Pack to its first-ever No. 1 national ranking and to NCAA Regionals for the ninth time in 10 years.

● NC State athletes achieved an all-time high Graduation Success Rate score of 86%. In addition, student athletes have earned the following academic recognitions:
  o 90 Academic All-Conference Student Athletes
  o 286 ACC Honor Roll
  o 232 NC State Dean’s List
  o 405 NC State Honor Roll
2 ACC Scholar Athletes of the Year: Andreas Vazaios (Men’s Swimming), Maggie Tamburro (Gymnastics)

4 ACC Postgraduate Scholarship Recipients: Anton Ipsen (Men’s Swimming & Diving), Hannah Moore (Women’s Swimming & Diving), Sydney Wootten (Women’s Soccer), Lindsay Morrow (Women’s Swimming & Diving)

NCAA Postgraduate Scholarship Recipient: Anton Ipsen (Men’s Swimming & Diving)

NFF National Scholar-Athlete: Ryan Finley (Football) (Ryan is the first NC State student-athlete to be named an NFF National Scholar-Athlete since 1981)

The cumulative average GPA for student athletes reached an all-time high of 3.05. The spring 2019 semester marked the 3rd consecutive semester with a cumulative GPA greater than 3.0 – the only three times this has been achieved by NC State student athletes.

Leadership Changes

- Eileen Goldgeier resigned as Vice Chancellor and General Counsel in August 2018 to return to her alma mater, Brown University. Rob Hoon served as the Interim while we conducted a national search, which resulted in Allison Newhart’s selection. Newhart joined us in February 2019 from The Pennsylvania State University.

- Scott Douglass resigned from his position as Vice Chancellor of Finance and Administration in October for a similar position at the Wharton School of Business at the University of Pennsylvania. Mary Peloquin-Dodd is serving as Interim Vice Chancellor while we conduct a national search.

- Alan Rebar retired in December 2018 from his position as Vice Chancellor of Research and Innovation. Mladen Vouk, Associate Vice Chancellor for Research and Development and Administration, agreed to serve in Rebar’s place as of January 1, 2019. Vouk is a distinguished professor and highly respected computer scientist who has played a massive role in the research growth at NC State.

- Director of Athletics Debbie Yow retired in April 2019. Over her years in the athletic department, Yow hired 17 coaches, led the refurbishment of Reynolds Coliseum, and moved NC State from #89 to #15 in the Learfield Directors’ Cup standings. Boo Corrigan joined NC State in May 2019 as the university’s 14th Director of Athletics. Corrigan has extensive experience in college athletics, serving as the director of athletics for the United States Military Academy for the past 8 years and previously working for universities including Duke, Florida State, and Notre Dame.

- Greg Raschke was named Senior Vice Provost and Director of Libraries in December 2018 after a national search. Raschke had served in an interim role since Susan Nutter’s retirement in October 2017.
Frank Buckless was named Stephen P. Zelnak Jr. Dean of the Poole College of Management in December 2018 after a nationwide search. His appointment became effective on July 1, 2019. Buckless previously served as Interim Dean of the college and Matthew and Ruth Keen Faculty Fellow. He has been a faculty member in the Department of Accounting at NC State since 1989.

**Professional Service**
Chancellor Woodson was engaged with the following organizations, further elevating NC State's reputation:

- Association of Public and Land-Grant Universities (APLU)
- NCAA Division I
  - Presidential Forum, the primary presidential advisory body for the Board of Directors
  - Presidential Forum’s Steering Committee, providing strategic direction for the Forum
- Executive Committee of the US Council on Competitiveness
- Executive Committee of the Business-Higher Education Forum

**Thought Leadership**
Chancellor Woodson also represented NC State in numerous events as a keynote speaker, panelist, and host. These include:

- American Society for Horticultural Science’s Annual Conference
- Food Systems Leadership Institute
- MyFuture NC Commission
- The State Energy Conference
- Triangle J Council of Governments Panel
- North Carolina Chamber’s Economic Forecast Forum
- Dude Solutions’ “Dude University” Higher Education Panel
- Triangle Smart Cities Summit
- LAS Annual Research Symposium
- Numerous alumni events – locally, nationally and globally – since the Think and Do the Extraordinary campaign launched to drive engagement with the university and build a greater network of advocacy.
CALL TO ORDER
Ed Weisiger, Chair of Committee

ROLL CALL
Ed Weisiger, Chair of Committee

READING OF STATE GOVERNMENT ETHICS ACT CONFLICT OF INTEREST STATEMENT
Ed Weisiger, Chair of Committee

RESPONSIBILITIES OF THE COMMITTEE

A. Review Committee Responsibilities as established in Bylaws
   Office of Finance and Administration
   Mary Peloquin-Dodd, Interim Vice Chancellor, Finance and Administration
   4.0A

B. Review Draft Agenda/Plan of Work for the Year
   Office of Finance and Administration
   Ed Weisiger, Chair, Audit, Risk Management and Finance Committee
   Mary Peloquin-Dodd, Interim Vice Chancellor, Finance and Administration
   4.0B

1. APPROVAL OF MINUTES
   Approval of April 18, 2019 Open and Closed Session Minutes
   4.1

2. ACTION ITEMS
   4.2

   A. Internal Audit Charter Review and Approval
      (Internal Audit Act)
      Office of Internal Audit
      Cecile Hinson, Director, Internal Audit
      4.2A

3. INFORMATIONAL REPORTS
   4.3

   A. Internal Audit Update
      (NC State Pol 01.05.1, Appendix 1, I.a.i-viii)
      Office of Internal Audit
      Cecile Hinson, Director, Internal Audit
      4.3A
B. Legislative and Finance/Budget Update 4.3B
(UNC Pol, Ch. 100.1, Appendix 1 (V), NC State Pol 01.05.1, Appendix 1, I.b)
Office of External Affairs, Partnerships & Economic Development
Kevin Howell, Vice Chancellor, External Affairs, Partnerships & Economic Development
Office of Finance and Administration
Mary Peloquin-Dodd, Interim Vice Chancellor, Finance and Administration
Barbara Moses, Associate Vice Chancellor, Budget and Resource Management

C. Enterprise Risk Management and Compliance Update 4.3C
(NC State Pol 01.05.1, Appendix 1, I.c.i, ii)
University Strategic Risk Management
Office of General Counsel
Allison Newhart, Vice Chancellor and General Counsel

4. COMMITTEE DISCUSSION TAB 4.4

5. ADDITIONAL INFORMATIONAL MATERIALS TAB 4.5

A. NC State Investment Fund Performance Review 4.5A
(NC State Pol 01.05.1, Appendix 1, I.b, d.i)

B. NC State Intermediate Term Fund Performance Review 4.5B
(NC State Pol 01.05.1, Appendix 1, I.b, d.i)

ADJOURN
APPENDIX 1

NC State Board of Trustees’ Delegations of Authority, Assignments and Guidelines

Audit, Risk Management and Finance Committee Delegated Authority and Assignments

a. Audit

   i. Provide oversight of the internal audit function.

   ii. Review and approve the annual internal audit plan at the beginning of the audit cycle.

   iii. Receive quarterly activity reports from the internal auditor.

   iv. Receive direct verbal and/or written reports from the university’s internal auditor regarding out of the ordinary reviews and findings that may involve senior level university employees, trustees or affiliates.

   v. Review a comparison of the annual internal audit plan to the actual internal audits performed.

   vi. Provide oversight of the annual financial statement audit.

   vii. Assure that the university is performing self-assessments of operating risks and evaluations of internal controls on a regular basis.

   viii. Meet with representatives of the State Auditor’s Office to review the annual state auditor’s report and the university’s corrective action, if any.

   ix. Review audit reports of University-associated entities.
b. Finance
   i. Advise the Chancellor with respect to the development of budget estimates for
      the university, and with respect to the execution and administration of the budget
      as approved by the General Assembly and the Board of Governors.

c. Risk Management
   i. Provide oversight of the risk management and compliance functions.
   ii. Receive annual reports on risk management, compliance and legal issues.

d. Planning

e. Policy Development
   i. Recommend to the Board of Trustees for approval policies regarding the
      preservation, maintenance and management of institutional trust funds.
   ii. Upon recommendation of the chancellor, recommend to the Board of Trustees
      for approval policies related to the maintenance of campus security.
   iii. Upon recommendation of the chancellor, recommend to the Board of Trustees
      for approval, policies related to information technology and cyber security.
NC STATE BOARD OF TRUSTEES
AUDIT, RISK MANAGEMENT AND FINANCE COMMITTEE RESPONSIBILITIES
FY 2019 – 2020

Plan of Work/Calendar
- Review of Committee Responsibilities (Annual)
- Review of Draft Agenda Items for the Year (Annual)

Approvals/Recommendations (Action Items)
- Minutes
- Internal Audit Charter Review and Approval (Annual) (Audit)
- Internal Audit Yearly Plan (Annual) (Audit)
- Recommendation to full Board – policy changes related to institutional trusts – as needed (Policy Development)
- Recommendation to full Board – campus security policy changes – as needed (Policy Development)
- Recommendation to full Board – information technology and cybersecurity policy changes – as needed (Policy Development)
- Recommendation to full Board – Bond/Debt – as needed (Finance)

Review of Required Annual Reports
- Annual Financial Report/Audit (State Auditors attend) (Audit)
- Annual Report on Endowment and Investments (Annual) (Finance, Policy Development)
- Associated Entities Review (Annual) (Audit)
- University Debt Update (Annual) (Finance)
- Intercollegiate Athletics Finance and Budget Reporting (Annual) (Finance)

Receive Informational Reports
- Enterprise Risk Management & Compliance Update – (Audit, Risk Management, Policy Development)
- Finance and Budget Update (Finance)
- Legislative Priorities (Audit, Finance, Risk Management, Policy Development)
- Internal Audit Update (Audit)
- Investment and Institutional Fund Performance Review (Finance, Policy Development)
Board of Trustees  
North Carolina State University  
Audit, Risk Management, and Finance Committee  
Agenda Topics for FY19-20 (listed alphabetically) *(Per Bylaws POL01.05.01, Appendix 1, I)*

**SEPTEMBER 2019**

**Approval of Bonds/Debt (if needed)** *(Finance, Policy Development)*
Enterprise Risk Management & Compliance Update *(Audit, Risk Management, Policy Development)*
  Proposed Topic: TBD
Legislative/Budget/Finance Update *(Audit, Finance, Risk Management, Policy Development)*
*Internal Audit Charter Review and Approval (Annual)* *(Audit)*
Internal Audit Update *(Audit)*
*Minutes Approval*
Investment and Institutional Fund Performance Review *(Finance, Policy Development)*
Review of Committee Responsibilities (Annual)
Review of Draft Agenda Items for the Year (Annual)

**NOVEMBER 2019**

**Approval of Bonds/Debt (if needed)** *(Finance, Policy Development)*
Campus Securities *(Risk Management)*
Enterprise Risk Management & Compliance Update *(Audit, Risk Management, Policy Development)*
  Proposed Topic: TBD
Legislative/Budget/Finance Update *(Audit, Finance, Risk Management, Policy Development)*
Internal Audit Update *(Audit)*
Investment Performance Review *(Finance, Policy Development)*
*Minutes Approval*
State Auditor’s Report *(State Auditors attend)* *(Audit)*

**FEBRUARY 2020**

Annual Report on Endowment and Investments (Annual) *(Finance, Policy Development)*
Associated Entities Review (Annual) *(Audit)*
Enterprise Risk Management & Compliance Update *(Audit, Risk Management, Policy Development)*
  Proposed Topic: TBD
Information Technology Update (Annual) *(Risk Management)*
Intercollegiate Athletics Finance and Budget Reporting (Annual) *(Finance)*
Internal Audit Update *(Audit)*
Legislative/Budget/Finance Update *(Audit, Finance, Risk Management, Policy Development)*
*Minutes Approval*

**APRIL 2020**

Budget Outlook/Legislative Priorities *(Audit, Finance, Risk Management, Policy Development)*
Enterprise Risk Management & Compliance Update *(Audit, Risk Management, Policy Development)*
  Proposed Topic: TBD
Legislative/Budget/Finance Update *(Audit, Finance, Risk Management, Policy Development)*
Internal Audit Update *(Audit)*
*Internal Audit Yearly Plan Review for Upcoming FY (Annual)* *(Audit)*
Investment Performance Review *(Finance, Policy Development)*
*Minutes Approval*
University Debt Update (Annual) *(Finance)*

*Except as noted, all update reports are as needed.*
July
- New Trustee Orientation (as needed)

September
- Approval of Bonds/Debts (NC State Pol 01.05.01, Appendix 1, I.b, and di) (as needed)
  Desired outcome and measure of success: Consider and recommend bond resolution approval to BOT when presented. BOT bond approval
- Enterprise Risk Management, and Compliance Update (NOTE: Do we want to change the name of this to include Safety and Security as referenced in the UNC Policy, or do you think that Risk Management covers it? (UNC Pol, Ch.100.1, Appendix 1 (XV) and UNC Pol., Ch 1300.9) (NC State Pol 01.05.1, Appendix 1, l.a.vi, c, d.ii)
  Desired outcome and measure of success: Receive informational reports on University security, risk and compliance issues. Review risk, security and compliance processes, including but not limited to Title IX, Clery Act, information technology, campus safety and other specifically related.
- Finance and Budget Update (UNC Pol, Ch. 100.1, Appendix 1 (V) (NC State Pol 01.05.1, Appendix 1, l.b)
  Desired outcome and measure of success: Receive informational reports on budget, institutional trust funds and investments to better understand resources and priorities that impact the University.
- Internal Audit Charter Review and Approval (Req by Internal Audit Act)
  Desired outcome and measure of success: Review the Internal Audit Charter to be compliant with the Internal Audit Act
- Internal Audit Update (NC State Pol 01.05.1, Appendix 1, l.a.i-viii)
  Desired outcome and measure of success: Receive informational reports quarterly on current activity, so that Trustees are aware of any issues that could impact the University. In addition, Trustees would receive bi-annual report on the activities by the Internal Audit Office in reference to the annual plan, and offer guidance when needed.
- Investment/Institutional Fund Performance Review (NC State Pol 01.05.1, Appendix 1, l.d.i)
  Desired outcome and measure of success: Inform Trustees of Investment Fund valuation and changes to market affecting the same via written materials provided at each meeting.
- Legislative Updates (NC State Pol 01.05.1 App 1, I. a-d) (as needed)
  Desired outcome and measure of success: Receive informational report on Legislative budget priorities and understanding possible impacts to University
- Policy Approvals (NC State Pol 01.05.1, Appendix 1, l.d) (as needed)
  Desired outcome and measure of success: Recommend appropriate policies to the full Board for approval.
- Review of Committee Responsibilities (Annually)
  Desired outcome and measure of success: Understand Committee scope and develop an effective plan of work for the year.

November
- Annual Audit Review (NC State Policy 01.05.1, Appendix 1, l.a.viii)
  Desired outcome and measure of success: Receive a clean audit opinion from the State Auditor’s Office.
- Annual Financial Report (NC State Policy 01.05.1, Appendix 1, l.a.viii)
  Desired outcome and measure of success: Review the University Financial Statement after receiving a clean audit opinion from the State Auditor’s Office. (Financial Statement distributed electronically).
- Approval of Bonds/Debts (NC State Pol 01.05.01, Appendix 1, l.b and .d.i) (as needed)
  Desired outcome and measure of success: Consider and recommend bond resolution approval to BOT when presented. BOT bond approval
- Enterprise Risk Management and Compliance Update (NC State Pol 01.05.1, Appendix 1, l.a.vi, c, d.ii)
  Desired outcome and measure of success: Receive information report of University any known risks, November includes report on Campus Securities.
- Finance and Budget Update (UNC Pol, Ch. 100.1, Appendix 1 (V) (NC State Pol 01.05.1, Appendix 1, l.b)
Desired outcome and measure of success: Receive informational reports on budget, institutional trust funds and investments to better understand resources and priorities that impact the University.

- **Internal Audit Update** (NC State Policy 01.05.1, Appendix 1, I.a.i-viii)
  Desired outcome and measure of success: Receive informational reports quarterly on current activity, so that Trustees are aware of any issues that could impact the University. In addition, Trustees would receive bi-annual report on the activities by the Internal Audit Office in reference to the annual plan, and offer guidance when needed.

- **Investment Performance Review** (NC State Policy 01.05.1, Appendix 1, I.d.i)
  Desired outcome and measure of success: Inform Trustees of Investment Fund valuation and changes to market affecting the same via written materials provided at each meeting.

- **Legislative Updates** (NC State Policy 01.05.1 App 1, I, a-d) (as needed)
  Desired outcome and measure of success: Receive informational report on Legislative budget priorities and understanding possible impacts to University

- **Policy Approvals** (NC State Policy 01.05.1, Appendix 1, I.d) (as needed)
  Desired outcome and measure of success: Recommend appropriate policies to the full Board for approval.

**February**

- **Annual Report on Endowment and Investments (Annual)** (UNC Policy, Ch. 100.1, Appendix 1 (VII) (NC State Policy 01.05.1, Appendix 1, I.d.i)
  Desired outcome and measure of success: To provide Committee with more understanding about University Endowment and Investments and progress over time.

- **Enterprise Risk Management and Compliance Update** (NC State Policy 01.05.1, Appendix 1, I.a.ii, c, d,ii)

- **Finance and Budget Update** (UNC Policy, Ch. 100.1, Appendix 1 (V) (NC State Policy 01.05.1, Appendix 1, I.b, I.d.i)
  Desired outcome and measure of success: Receive informational reports on budget, institutional trust funds and investments to better understand resources and priorities that impact the University.

- **Intercollegiate Athletics Finance and Budget Reporting (Annual)** (UNC Policy, Ch. 1100.1.1(R) I.B)
  Desired outcome and measure of success: Receipt of financial indicators contained in the NCAA Dashboard “Presidential View” with both annual and 5-year information as well as review of annual budget including major sources of revenue and expenses. Informational report promotes transparency of Athletics financial operations.

- **Internal Audit Report** (as required by BOG) (NC State Policy 01.05.1, Appendix 1, I.a.iii, I.a.v)
  Desired outcome and measure of success:

- **Internal Audit Update** (NC State Policy 01.05.1, Appendix 1, I.a.iii, I.a.iv, I.a.v)
  Desired outcome and measure of success: Receive informational reports quarterly on current activity, so that Trustees are aware of any issues that could impact the University. In addition, Trustees would receive bi-annual report on the activities by the Internal Audit Office in reference to the annual plan, and offer guidance when needed.

- **Legislative Updates** (NC State Policy 01.05.1 App 1, I, a-d) (as needed)
  Desired outcome and measure of success: Receive informational report on Legislative budget priorities and understanding possible impacts to University

- **Policy Approvals** (NC State Policy 01.05.1, Appendix 1, I.d) (as needed)
  Desired outcome and measure of success: Recommend appropriate policies to the full Board for approval.

**April**

- **Associated Entities Review** (UNC Policy, Ch. 600.2.1.5,) (NC State Policy 01.05.1, Appendix 1, I.a.ix)
  Desired outcome and measure of success: To inform Committee on the activities and broad overview of annual performance of associated entities as reported to UNC General Administration.
• Enterprise Risk Management and Compliance Update (NC State Pol 01.05.1, Appendix 1, I. a.vi, c, d.ii)
  Desired outcome and measure of success: Receive information report of University any known risks,
• Finance and Budget Update (UNC Pol, Ch. 100.1, Appendix 1 (V) (NC State Pol 01.05.1, Appendix 1, I.b, l.d.i)
  Desired outcome and measure of success: Receive informational reports on budget, institutional trust
  funds and investments to better understand resources and priorities that impact the University.
• Internal Audit Update (NC State Pol 01.05.1, Appendix 1, I.a.iii, I.a.iv, I.a.v)
  Desired outcome and measure of success: Receive informational reports quarterly on current activity, so
  that Trustees are aware of any issues that could impact the University. In addition, Trustees would
  receive bi-annual report on the activities by the Internal Audit Office in reference to the annual plan, and
  offer guidance when needed.
• Internal Audit Yearly Plan Review and Approval(NC State Policy 01.05.1, Appendix 1, I. a.ii)
  Requires Committee Approval Desired outcome and measure of success: .
• Investment/Institutional Trust Performance Review (NC State Pol 01.05.1, Appendix 1, I.d.i)
  Desired outcome and measure of success: Inform Trustees of Investment Fund valuation and changes to
  market affecting the same via written materials provided at each meeting.
• Legislative Updates (NC State Pol 01.05.1 App 1, I. a-d) (as needed)
  Desired outcome and measure of success: Receive informational report on Legislative budget priorities
  and understanding possible impacts to University
• Policy Approvals (NC State Pol 01.05.1, Appendix 1, I.d) (as needed)
  Desired outcome and measure of success: Recommend appropriate policies to the full Board for
  approval.
• University Debt Update (NC State Pol 01.05.1, Appendix 1, I.b.)
  Desired Outcome: Receive informational report regarding the University Debt, and debt standings/rating
  Measure of Success: Knowledgeable regarding University Debt, standings and ratings
Chair Cabaniss opened the meeting at 3:16 p.m. in the Chancellor’s Conference Room in Holladay Hall. Roll was taken and a quorum was present. Committee members present for the meeting were:

Mr. Tom Cabaniss, Chair  
Ms. Jess Errico  
Ms. Ann Goodnight  
Mr. Jim Harrell  
Dr. Ron Prestage  
Ms. Susan Ward

All members of the Committee were reminded of their duty to avoid conflicts of interest and appearances of conflicts of interest under the State Government Ethics Act. With no known conflicts of interests, the meeting continued.

Minutes from the February 21, 2019 meeting were presented for approval. Ms. Goodnight made a motion to accept the minutes and Ms. Ward seconded.

The Internal Audit Annual Audit Plan for Fiscal Year 2020 was presented. The Committee heard about the Continuous Risk Assessment and Audit Planning process used to develop the Plan and referenced the illustration of that process in the materials. Time was allowed for any questions related to the proposed plan. Dr. Prestage made a motion to accept the Plan as presented, Ms. Goodnight seconded the motion. The Committee unanimously approved the FY 2020 Audit Plan.

A quarterly update on Internal Audit activity since the last meeting was given. There are 23 engagements in process, one investigation was closed, one consultation related to WolfTime and a special assignment related to NIST were closed. Two audits in Campus Enterprises were completed and corrective actions started. Sensitive information regarding the Campus Enterprise audits was discussed in closed session.

The Committee heard information related to the budget timeline. The Governor’s Budget has already been released and the House and Senate are expected to release theirs in late April early May, with negotiations expected mid-May. Capital requests could affect many things including funding for building reserves, faculty recruitment and ARP’s. There are also several bills that could impact NC State as well as the UNC System, such as alcohol sales at athletic events, honey bee laboratory funds, and repeal of tuition surcharge.

The attached third quarter financial results and position for the current fiscal year 2019 were compared with information for the same time for fiscal year 2018. The University’s financial performance and position is favorable and consistent with the prior year.

The Annual Review of Associated Entities was reported to satisfy the annual Associated Entity review required by the Board of Governors. All audits have been sent to General Administration and the copies of the Audits were made available to the Committee. The Student Aid Association was issued a management letter this year due to transition with new auditors. All other associated entities received unqualified audit
The committee heard a debt update, which included a review of the ten-year history of the University’s Outstanding Debt, by amount, type, and purpose. The University took advantage of low rates and locked in low fixed costs. There are no longer any swaps or synthetically fixed bonds. There have been no major changes in debt by purpose, the three largest components remaining housing, Talley Student Union and energy savings. As previously reported, borrowing to supplement funding of Carmichael Renovations, Engineering Oval, and Plant Sciences projects is underway. The Committee was also apprised of the impact of recent tax changes on the debt markets.

A report on the University’s compliance structure was also given. The report included background information on the definition of compliance and university-wide obligations with decentralized functional areas. The University has a compliance steering committee and a compliance officials working group that provide leadership and ownership. The ultimate goal of the compliance and integrity program is to enhance compliance consciousness in the campus community. The Committee learned about the reporting mechanisms, the 100 federal laws and regulations that make up the compliance matrix and reporting calendar. NC State is making changes to keep up with compliance requirements and needs.

Tabitha Groelle made a motion that the Committee convene to closed session to plan, conduct and hear a report concerning an audit under N.C. General Statutes 132-6.19(c) and 143-318.11(a)(1) to protect from disclosure of security features of electronic data processing systems and information technology systems. Dr. Prestage moved to convene to closed session, Mr. Andrews seconded, and with no dissent the Committee convened to closed session at 4:37 p.m.

The Committee reconvened to open session at 4:41 p.m.

Chair Cabaniss referenced informational materials provided to the Committee.

With no further business, the Committee adjourned at 4:41 p.m.

Submitted by ____________________________
Secretary to the Committee

Approved ____________________________
Chair of the Committee

Attachments
## North Carolina State University
### Statement of Net Position
#### Unaudited
#### As of March 31, 2018 and 2019

<table>
<thead>
<tr>
<th>ASSETS</th>
<th>Fiscal Year 2019</th>
<th>Fiscal Year 2018</th>
<th>Increase/Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash and Cash Equivalents</td>
<td>366,386,310.05</td>
<td>337,636,219.10</td>
<td>28,750,090.95</td>
</tr>
<tr>
<td>Receivables</td>
<td>41,202,947.22</td>
<td>37,226,677.34</td>
<td>3,976,269.88</td>
</tr>
<tr>
<td><strong>Total Current Assets</strong></td>
<td>407,589,257.27</td>
<td>374,862,896.44</td>
<td>32,726,360.83</td>
</tr>
<tr>
<td>Restricted Cash - Capital Improvements</td>
<td>51,596,129.58</td>
<td>53,634,558.66</td>
<td>(2,038,429.08)</td>
</tr>
<tr>
<td>Capital Assets Depreciable Net - Note 1</td>
<td>1,823,713,168.34</td>
<td>1,844,363,802.33</td>
<td>(20,650,633.99)</td>
</tr>
<tr>
<td>Capital Assets Non-Depreciable - Note 1</td>
<td>156,402,205.27</td>
<td>112,568,077.74</td>
<td>43,834,127.53</td>
</tr>
<tr>
<td>Investments</td>
<td>525,874,700.22</td>
<td>485,848,200.30</td>
<td>40,026,499.92</td>
</tr>
<tr>
<td>Notes Receivable</td>
<td>10,662,367.00</td>
<td>12,425,806.68</td>
<td>(1,763,439.68)</td>
</tr>
<tr>
<td><strong>Total Noncurrent Assets</strong></td>
<td>2,568,248,570.41</td>
<td>2,508,840,445.71</td>
<td>59,408,124.70</td>
</tr>
<tr>
<td><strong>Total Assets</strong></td>
<td>2,975,837,827.68</td>
<td>2,883,703,342.15</td>
<td>92,134,485.53</td>
</tr>
</tbody>
</table>

#### DEFERRED OUTFLOWS OF RESOURCES - Note 2
<table>
<thead>
<tr>
<th></th>
<th>Fiscal Year 2019</th>
<th>Fiscal Year 2018</th>
<th>Increase/Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deferred Outflows Derivatives</td>
<td>0.00</td>
<td>9,026,065.00</td>
<td>(9,026,065.00)</td>
</tr>
<tr>
<td>Deferred Outflows Related to Pensions</td>
<td>95,716,440.00</td>
<td>139,036,517.00</td>
<td>(43,320,077.00)</td>
</tr>
<tr>
<td>Deferred Outflows Related to OPEB</td>
<td>40,809,614.00</td>
<td>38,641,648.00</td>
<td>2,168,166.00</td>
</tr>
<tr>
<td><strong>Total Deferred Outflows</strong></td>
<td>136,526,254.00</td>
<td>186,704,230.00</td>
<td>(50,177,976.00)</td>
</tr>
</tbody>
</table>

#### LIABILITIES
<table>
<thead>
<tr>
<th></th>
<th>Fiscal Year 2019</th>
<th>Fiscal Year 2018</th>
<th>Increase/Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounts Payable And Accrued Liabilities</td>
<td>17,308,234.00</td>
<td>15,009,952.39</td>
<td>2,298,281.61</td>
</tr>
<tr>
<td>Commercial Paper Payable</td>
<td>25,000,000.00</td>
<td>20,000,000.00</td>
<td>5,000,000.00</td>
</tr>
<tr>
<td>Unearned Revenue</td>
<td>6,302,742.36</td>
<td>6,146,694.78</td>
<td>156,047.58</td>
</tr>
<tr>
<td><strong>Total Current Liabilities</strong></td>
<td>48,610,976.36</td>
<td>41,156,647.17</td>
<td>7,454,329.19</td>
</tr>
<tr>
<td>Bonds Payable</td>
<td>482,249,656.67</td>
<td>501,293,344.85</td>
<td>(19,043,688.18)</td>
</tr>
<tr>
<td>Deposits Payable</td>
<td>1,886,426.30</td>
<td>1,629,446.85</td>
<td>256,979.45</td>
</tr>
<tr>
<td>US Government Grants Refundable</td>
<td>3,221,418.00</td>
<td>3,674,150.85</td>
<td>(452,732.85)</td>
</tr>
<tr>
<td>Notes Payable</td>
<td>62,229,128.19</td>
<td>66,126,801.53</td>
<td>(3,897,673.34)</td>
</tr>
<tr>
<td>Unearned Revenue</td>
<td>72,357,569.36</td>
<td>73,897,092.11</td>
<td>(1,539,522.75)</td>
</tr>
<tr>
<td>Pension Liability - Note 2</td>
<td>176,617,483.00</td>
<td>202,388,385.00</td>
<td>(25,770,902.00)</td>
</tr>
<tr>
<td>OPEB Liability - Note 2</td>
<td>1,161,399,772.00</td>
<td>1,730,004,018.00</td>
<td>(568,604,246.00)</td>
</tr>
<tr>
<td><strong>Total Noncurrent Liabilities</strong></td>
<td>1,959,961,453.52</td>
<td>2,579,013,239.19</td>
<td>(600,008,097.49)</td>
</tr>
<tr>
<td><strong>Total Liabilities</strong></td>
<td>2,008,572,429.88</td>
<td>2,620,169,886.36</td>
<td>(592,557,456.48)</td>
</tr>
</tbody>
</table>

#### DEFERRED INFLOWS OF RESOURCES - Note 2
<table>
<thead>
<tr>
<th></th>
<th>Fiscal Year 2019</th>
<th>Fiscal Year 2018</th>
<th>Increase/Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deferred Inflows Related to Pensions</td>
<td>5,778,080.00</td>
<td>(9,565,156.00)</td>
<td>15,343,236.00</td>
</tr>
<tr>
<td>Deferred Inflows Related to OPEB</td>
<td>558,917,888.00</td>
<td>0.00</td>
<td>558,917,888.00</td>
</tr>
<tr>
<td><strong>Total Deferred Inflows</strong></td>
<td>564,695,968.00</td>
<td>(9,565,156.00)</td>
<td>574,261,124.00</td>
</tr>
</tbody>
</table>

#### NET POSITION
<table>
<thead>
<tr>
<th></th>
<th>Fiscal Year 2019</th>
<th>Fiscal Year 2018</th>
<th>Increase/Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning Net Position - July 1</td>
<td>559,297,045.16</td>
<td>477,791,450.79</td>
<td>81,505,594.37</td>
</tr>
<tr>
<td>Increase In Net Assets</td>
<td>(20,201,361.36)</td>
<td>(17,988,609.00)</td>
<td>(2,212,752.36)</td>
</tr>
<tr>
<td><strong>Total Net Position</strong></td>
<td>539,095,683.80</td>
<td>459,802,841.79</td>
<td>79,292,842.01</td>
</tr>
</tbody>
</table>

**Notes:**
**Note 1** - The amounts shown for Capital Assets are the amounts reported on the audited financial statements as of June 30, 2017 and 2018 - adjusted for estimated Depreciation expense. Adjustments for current year asset additions are not included - these adjustments are made at year end.

**Note 2** - The amount shown for the Net Pension Liability is reflective of the University's share of the State of NC's collective net pension liability as measured on June 30th 2017. The associated Deferred Outflows and Inflows of Resources will be recognized against Pension expense over future periods.

(Outflows will increase the expense; Inflows will decrease the expense)

The amount shown for the Net OPEB Liability is reflective of the University's share of the Retirement Health Benefit Fund as of June 30th 2017. The associated OPEB Deferred Outflows and Inflows of Resources will be recognized against OPEB expense over future periods (Outflows will increase the expense; Inflows will decrease the expense)

**Note 3** - This statement does not include many year end entries required for university financial reporting, such as various asset reclassifications, fair market value adjustments, additional receivables, additional liabilities including compensated absences and funds held for others.
# North Carolina State University

## Statement of Revenues, Expenses and Changes in Net Assets

### Unaudited

For the Nine Months Ended March 31, 2018 and 2019

<table>
<thead>
<tr>
<th>Revenue/Expense</th>
<th>Fiscal Year 2019</th>
<th>Fiscal Year 2018</th>
<th>Increase/Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>REVENUES</strong></td>
<td>Through 3/31/2019</td>
<td>Through 3/31/2018</td>
<td></td>
</tr>
<tr>
<td><strong>Operating Revenues</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student Tuition And Fees</td>
<td>434,845,159.89</td>
<td>416,862,994.10</td>
<td>17,982,165.79</td>
</tr>
<tr>
<td>Federal Appropriations</td>
<td>20,485,187.94</td>
<td>16,139,933.00</td>
<td>4,345,254.94</td>
</tr>
<tr>
<td>Federal Grants And Contracts</td>
<td>159,321,504.58</td>
<td>153,398,421.55</td>
<td>5,923,083.03</td>
</tr>
<tr>
<td>State And Local Grants And Contracts</td>
<td>57,071,436.52</td>
<td>51,187,088.81</td>
<td>5,884,347.71</td>
</tr>
<tr>
<td>Nongovernmental Grants And Contracts</td>
<td>70,942,087.25</td>
<td>67,050,867.47</td>
<td>3,891,219.78</td>
</tr>
<tr>
<td>Sales And Services</td>
<td>228,781,484.28</td>
<td>226,713,437.32</td>
<td>2,068,046.96</td>
</tr>
<tr>
<td>Interest Earnings On Loans</td>
<td>172,298.49</td>
<td>170,049.30</td>
<td>2,249.19</td>
</tr>
<tr>
<td>Other Operating Revenues</td>
<td>13,197,314.29</td>
<td>9,920,416.59</td>
<td>3,276,897.70</td>
</tr>
<tr>
<td><strong>Total Operating Revenues</strong></td>
<td>984,816,473.24</td>
<td>941,443,208.14</td>
<td>43,373,265.10</td>
</tr>
<tr>
<td><strong>EXPENSES</strong></td>
<td>Through 3/31/2019</td>
<td>Through 3/31/2018</td>
<td></td>
</tr>
<tr>
<td><strong>Salaries And Benefits</strong></td>
<td>762,359,678.80</td>
<td>723,558,523.14</td>
<td>38,801,155.66</td>
</tr>
<tr>
<td><strong>Scholarships And Fellowships</strong></td>
<td>160,699,920.94</td>
<td>153,934,126.11</td>
<td>6,765,804.83</td>
</tr>
<tr>
<td><strong>Services</strong></td>
<td>187,272,654.18</td>
<td>175,502,391.02</td>
<td>11,770,263.16</td>
</tr>
<tr>
<td><strong>Supplies And Materials</strong></td>
<td>198,184,445.07</td>
<td>160,993,897.31</td>
<td>37,190,547.76</td>
</tr>
<tr>
<td><strong>Utilities</strong></td>
<td>24,144,028.84</td>
<td>22,761,606.25</td>
<td>1,382,422.59</td>
</tr>
<tr>
<td><strong>Depreciation - Note 1</strong></td>
<td>74,191,041.00</td>
<td>71,731,992.45</td>
<td>2,459,048.55</td>
</tr>
<tr>
<td><strong>Total Operating Expenses</strong></td>
<td>1,406,851,668.83</td>
<td>1,308,482,536.28</td>
<td>98,369,132.55</td>
</tr>
</tbody>
</table>

**Operating Loss**

(422,035,195.59) (367,039,328.14) (54,995,867.45)

<table>
<thead>
<tr>
<th>Nonoperating Revenues (Expenses)</th>
<th>Fiscal Year 2019</th>
<th>Fiscal Year 2018</th>
<th>Increase/Decrease</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>State Appropriations</strong></td>
<td>291,070,368.05</td>
<td>276,526,388.48</td>
<td>14,543,979.57</td>
</tr>
<tr>
<td><strong>Gifts</strong></td>
<td>78,170,970.71</td>
<td>68,950,645.17</td>
<td>9,220,325.54</td>
</tr>
<tr>
<td><strong>Investment Income (Net Of Investment Expense)</strong></td>
<td>7,841,912.68</td>
<td>3,481,004.90</td>
<td>4,360,907.78</td>
</tr>
<tr>
<td><strong>Interest And Fees On Debt</strong></td>
<td>(11,837,796.13)</td>
<td>(13,432,197.09)</td>
<td>1,594,400.96</td>
</tr>
<tr>
<td><strong>Federal Interest Subsidy On Debt</strong></td>
<td>570,993.43</td>
<td>569,159.40</td>
<td>1,834.03</td>
</tr>
<tr>
<td><strong>Other Nonoperating Revenues (Expenses)</strong></td>
<td>(676,629.02)</td>
<td>(118,092.17)</td>
<td>(558,536.85)</td>
</tr>
<tr>
<td><strong>Net Nonoperating Revenues</strong></td>
<td>364,939,819.72</td>
<td>335,976,908.69</td>
<td>28,962,911.03</td>
</tr>
<tr>
<td><strong>Income Before Other Revenues</strong></td>
<td>(57,095,375.87)</td>
<td>(31,062,419.45)</td>
<td>(26,032,956.42)</td>
</tr>
<tr>
<td><strong>Capital Appropriations</strong></td>
<td>4,336,793.00</td>
<td>5,621,800.00</td>
<td>(1,285,007.00)</td>
</tr>
<tr>
<td><strong>Capital Grants</strong></td>
<td>30,786,087.51</td>
<td>5,672,876.45</td>
<td>25,065,211.06</td>
</tr>
<tr>
<td><strong>Capital Gifts</strong></td>
<td>1,789,134.00</td>
<td>1,779,134.00</td>
<td>10,000.00</td>
</tr>
</tbody>
</table>

**Increase In Net Assets - Note 2**

(20,201,361.36) (17,988,609.00) (2,212,752.36)

### Notes:

**Note 1** - The amounts shown for Depreciation are estimates based on amounts reported on the audited financial statements for the Fiscal Years ending June 30, 2017 and 2018.

**Note 2** - This statement does not include many year end entries required by GASB for university financial reporting, such as tuition discounting, internal sales elimination, capitalization of fixed asset expenses greater than $5,000, blending of the NCSU Partnership, and other year end entries.
INTERNAL AUDIT DIVISION

INTERNAL AUDIT CHARTER

MISSION

The mission of the Internal Audit Division (IAD) is to support the University in the successful achievement of its strategic goals. This is accomplished by serving as an independent partner to University leadership, faculty, and staff in the identification and balancing of their units’ risks through objective, flexible, and proactive audit and consultation services. IAD provides independent evaluation of the effectiveness of risk management, control, and governance processes and makes recommendations for improvement.

SCOPE OF WORK

IAD’s scope of work includes assessing whether:

- Risks are appropriately identified and managed across the University
- University governance processes support the organization’s strategies and objectives
- Financial, process, and information technology controls are effective and efficient
- Policies, regulations, rules, and other guidance and training are consistent in their information, effective, and do not create undue bureaucracy or inefficiencies
- University units are compliant to University, UNC-System Office (UNC-SO), State, and Federal requirements, related processes are administered correctly, and issues are recognized and addressed properly and promptly
- Significant financial, managerial, and operating information is accurate, reliable, secure, and timely
- Actions of University personnel are in compliance with policies and applicable laws and regulations
- University resources are acquired economically, used efficiently, and adequately protected
- Quality and continuous improvement are fostered in the University’s processes

INDEPENDENCE AND ACCOUNTABILITY

All internal audit activity must be free from undue influence or interference in the selection of activities to be examined, determination of the scope or methodology of work, and in communication of the results in accordance with the international standards of independence as set forth by the Institute of Internal Auditors (IIA).

The Chief Audit Officer & Director of Internal Audit (CAO) reports functionally and administratively directly to the Chancellor. The CAO is also accountable to the Board of Trustees (BOT) through its Audit, Risk Management and Finance Committee (Committee) as required by the University of North Carolina (UNC) Board of Governors (BOG) and the IIA standards. The CAO communicates and interacts directly and independently with the Committee. In addition, the
CAO has informational reporting accountability to the Executive Vice Chancellor and Provost and the Vice Chancellor for Finance and Administration.

**RESPONSIBILITY**

The CAO has the responsibility to ensure IAD achieves the following:

- Maintain compliance with North Carolina General Statute (GS) Chapter §116-40.7 (which establishes the independent audit function at state universities); NC GS Chapter §143 Article 79, The NC Internal Audit Act; and audit-related requirements from the UNC BOG
- Establish a risk assessment process to support the development of a risk-based audit plan and a risk-based approach to individual engagements
- Submit, at least annually, a risk-based audit plan to the Chancellor and the Committee for approval and implement that audit plan
- Continually re-evaluate the audit plan based on changing conditions and emerging issues and revise as necessary to ensure that the highest risk items are given priority
- Consider the scope of work of the external auditors and regulators, as appropriate, for the purpose of providing optimal audit coverage to the organization
- Appropriate and necessary interactions with the various external audit-related governance groups occur as needed, including interactions with UNC-SO, the state’s Council of Internal Audit, Office of the State Auditor (OSA), Office of the State Controller, and the State Bureau of Investigation
- Appropriate and necessary interactions with the various internal audit and investigation related units occur as needed, including interactions with Office of the General Counsel, University Police Department, Employee Relations, and Student Conduct
- Investigate suspected fraudulent activities and notify the Chancellor, the Committee, and other management of any significant results; assist OSA or other external investigators with investigation of allegations as necessary
- Issue audit reports or engagement letters as appropriate to the Chancellor and other management summarizing the results of audit or consulting activities
- Report recent activities and high-risk issues to the Committee at regular quarterly meetings
- Perform consulting services, beyond internal auditing’s assurance services, to assist management in meeting its objectives and to proactively address issues
- Coordinate with other control and monitoring functions both internal and external regarding areas such as risk management, compliance, security, legal affairs, environmental health, and external audits and investigations
- Keep the Chancellor, the Committee, the Executive Vice Chancellor and Provost, and the Vice Chancellor for Finance and Administration informed of emerging trends and successful practices in the internal auditing profession
- Educate the campus-community on University policies, State and Federal regulations, best practices, and the importance of effective internal controls
- Participate on various committees, compliance task forces, and system development projects to provide guidance, proactively address potential issues and internal control weaknesses, improve inefficiencies, and increase effectiveness
- Evaluate and assess significant University functions and new or changing services, processes, operations, major systems, and control processes coincident with their development, implementation, and/or expansion
- Develop and maintain a continuous improvement and quality assurance program covering all aspects of IAD’s activities
- Internal audit activity is governed by adherence to The Institute of Internal Auditors’ Mandatory Guidance, which includes the Core Principles for the Professional Practice of Internal Auditing, the Code of Ethics, the *International Standards for the Professional Practice of Internal Auditing*, and the Definition of Internal Auditing.

**AUTHORITY**

The CAO is authorized to:

- Have direct and unrestricted access to senior management and the BOT
- Have (and delegate to the IAD staff as appropriate) unrestricted, independent access to all personnel, units, functions, records, and property relevant to the performance of engagements and risk assessment activities
- Allocate resources, set frequencies, select subjects, determine scopes of work, and apply the techniques required to accomplish audit objectives
- Obtain the necessary assistance of personnel in units of the organization where they perform audits as well as other specialized services from within or outside the organization as needed

The CAO and staff of the IAD are not authorized to:

- Perform any operational duties for the organization or its affiliates
- Initiate or approve accounting transactions external to the IAD
- Make decisions that are the responsibility of management

To Be Approved by the NC State University Board of Trustees
Audit, Risk Management and Finance Committee

*September 12, 2019*
ACHIEVEMENTS TOWARDS UNIVERSITY STRATEGIC GOALS

The Internal Audit Division (IAD) is in a unique position to elicit positive change and add value to the university through a variety of engagement services including assurance (formal audits), advisory/consulting, investigative, and special assignments. In Fiscal Year 2019, IAD’s engagements and activities touched on four of the university’s strategic goals as noted in the chart below, with examples following:

<table>
<thead>
<tr>
<th>UNIVERSITY GOAL 1 – ENHANCE STUDENT SUCCESS</th>
</tr>
</thead>
</table>
| Matt Wall joined IAD as an intern auditor in May 2019. Matt graduated from NC State in May 2019 with a Bachelor of Science in Accounting and a concentration in Internal Auditing. Internships with our team provide a student with total immersion in the "real world" of the internal auditing profession. The student is assigned to audit and consulting projects and, with the coaching and mentorship of a senior auditor, performs all aspects of a typical project from risk assessment and planning to developing audit findings and writing the report. This experience positions the student ahead of many new graduates and even some experienced junior auditors; thus, improving their ability to compete for jobs in the marketplace.

IAD presented on data analytics and auditing to about 35 undergraduate students in a Poole College of Management audit course in January 2019. Using Tableau (data analysis and visualization software), Neil Holloway and M'Shiela Hawthorne presented practical applications of how data visualization can be used to identify trends and risks within financial business processes such as purchasing and journal entries. Additionally, Neil and M'Shiela answered questions about the auditing profession and their experience auditing in higher education.

<table>
<thead>
<tr>
<th>UNIVERSITY GOAL 3 – SUPPORT INTERDISCIPLINARY SCHOLARSHIP</th>
</tr>
</thead>
<tbody>
<tr>
<td>IAD provided advisory services on university-wide projects to support administration of research activities including interdisciplinary research. This included the Enterprise Research Administration (ERA) system project as well as the creation of the Secure University Research Environment. IAD joined work teams at all levels to provide insight into research data security and compliance requirements as multiple units collaborated to create new university-wide processes and resources. These activities support all areas of research including colleges, centers, institutes, clusters, interdisciplinary programs and initiatives.</td>
</tr>
</tbody>
</table>
UNIVERSITY GOAL 4 – PURSUE ORGANIZATIONAL EXCELLENCE
During audits, collaborations, consultations, and investigations, issues were identified and discussed with management and stakeholders to facilitate improvements in a variety of categories including the following.

Greater Employee Awareness
- IT security
- Identifying and reporting concerning behavior
- Disclosing and managing conflict of interest
- Fiscal responsibility and accountability
- State and university purchasing requirements and procedures

Enhanced Processes and Procedures
- Management and oversight of funds
- Review of financial transactions for documentation of allowability, allocability, and appropriateness
- Governance, security, and internal controls over ultra-sensitive data
- Securing state and university property
- Accurate time reporting

Shared Best Practices
Sharing best practices helps the university fill knowledge gaps, improve efficiencies, and enables improved decision making by leadership. Examples of IAD activities in this category included providing advisory and consultative services to:
  - College of Agriculture and Life Sciences (CALS)
    - Scotland and Warren County Cooperative Extension Offices business process improvements
    - Consulting with Center for Integrated Pest Management Research and the Prestage Department of Poultry Science regarding compliance with university policy
  - Office of Research and Innovation (ORI), Office of General Counsel (OGC), Office of Finance and Administration (OFA), and Office of Information Technology (OIT) as they developed a collaborative compliance process
    - Increased awareness of research compliance requirements
    - Provided compliance educational opportunities
    - Created new processes that will optimize compliance activities

Efficiency and Effectiveness
IAD’s broad-based perspective of the university uniquely positions it to identify opportunities to improve efficiency and effectiveness. Examples of IAD activities in this category included providing advisory and consultative services to:
  - Business Operations Group Steering Committee
    - Share knowledge and best practices to improve business practices
    - Advise the Vice Chancellor of OFA
    - Suggest topics and speakers for meetings
    - Evaluate effectiveness and suggest improvements
  - Controller’s Office - implementation of a vendor management system application
  - ORI and OFA - identifying research administration business processes and university-wide requirements
for a new ERA system to replace multiple legacy systems

- OIT Security & Compliance (S&C) and the HIPAA Compliance Sub-committee - facilitate a complete HIPAA security assessment and privacy review for the HIPAA covered health care components at NC State
- Compliance Manager services - enhancing university-wide compliance activities; increasing collaboration amongst compliance units; expanding reporting opportunities for student, faculty, and staff for ethical or compliance related concerns; and, promoting self-assessment in each of the university’s major compliance offices

**Internal Process Improvements**
We have made substantial progress this year in developing new data analytics competency within the unit. We are incorporating data visualizations into our engagements as part of risk analysis, planning, fieldwork, and reporting. During meetings with university business leaders, we have used our analytics tools to visualize preliminary audit results, trends, and risks within business processes. We are tying data visualizations to higher risk transactions, fund classifications, and accounts to help identify potential areas of non-compliance and unallowable use of university resources.

We have identified new capabilities within our analytics tools that allow us to quickly join different university data sets and create dashboards to visualize data at multiple levels. Our ability to drill both deeply and broadly across data sets allows better identification of issues, trends, and areas for improvement across the university. We continue to optimize the functionality and utility of our analytics tools within our engagements and we are building on this work for future engagements and to share our methodologies with business units across campus.

**UNIVERSITY GOAL 5 – ENGAGE LOCALLY AND GLOBALLY**

**Focus on Customer Service**
As the mission of IAD is to support the university in the successful achievement of its strategic goals, we have worked hard to become a trusted partner to the university community. Noted below are some examples of our on-going customer service focus.

- A County Extension Director noted: “I’ve been through many audits. I wanted to compliment you on the professionalism of your Staff. They asked thorough questions without being demeaning or appearing judgmental... This was a positive experience.”
- Supporting OIT S&C through the Office of State Auditor audit of NCSU's Information Technology General Controls
- Partnering with our consultant to train state agency auditors in the use of Tableau
- Consulting with the Office of Global Engagement, Associate Director for NC State European Center in Prague to assist in determining IT needs for Prague as their current support contract was ending
- Participating on various senior management candidate searches to interview, evaluate and recommend the most qualified candidates for critical positions across the university such as:
  - Office of Finance and Administration – Vice Chancellor of Finance and Administration
  - McKimmon Center - Vice Provost of Continuing Education
  - CALS - Director of Business Services
  - Office of Global Engagement – Financial Operations Manager
Focus on Community Involvement
Throughout the year, IAD participates in opportunities to give back to both our local and global communities. Each year the team participates in group community service by volunteering for unanimously selected activities. These activities not only benefit our communities but also provide a valuable opportunity for strengthening our team bonds. This year the IAD staff:

- Visited the Food Bank of Central and Eastern North Carolina to sort and bag 18,771 pounds of produce providing 15,650 meals to NC families
- Selected three children’s wish lists from the Salvation Army’s Angel Tree and purchased holiday gifts
- Assembled and repaired furniture at the Green Chair Project which provides home furnishings for families and individuals transitioning from homelessness
- Achieved a 100% participation rate in the State Employees Combined Campaign

PROGRAM REVIEW
A Quality Assessment Review (QAR) is mandated by the Institute of Internal Auditors (IIA) Professional Standards and by the State of North Carolina for all internal audit units every five years. NCSU IAD’s QAR report was issued in August 2018 with the reviewer noting that IAD:

- Has implemented “cutting edge” best practices
- Is very effective, often exceeding the expectations of leadership
- Conforms to the IIA Standards

Specifically, the independent assessor noted: “IAD implemented agile auditing, which is a leading trend within the internal audit profession. This best-practice emphasis has facilitated IAD’s maturation into providing forward-focused, risk-based services, which significantly increases the unit’s positive impact on the university. Agile auditing allows IAD to direct time and effort toward the issues, challenges, and risks that most affect the university’s ability to implement strategy and achieve goals. This has been accomplished through leveraging technology and data analytics across the audit life cycle to: provide broader-based, more dynamic audit scopes; streamline IAD audit processes and procedures; increase IAD’s services despite limited staffing resources; and, deliver more relevant, higher impact services.”

Continuous improvement is embedded within the IAD culture and is incorporated within all of our activities. All staff participate and take ownership in improving internal processes through active discussion during weekly management meetings, staff meetings, and performance appraisals.

IAD developed and implemented a Continuous Risk Assessment (RA) process in 2008, well before it became a nationwide best practice. This process is at the core of our audit and consulting engagements and is used to ensure comprehensive input to our continuous risk assessment program. All team members visit faculty and staff across the university every week in strategic conversations to discuss their unit’s strategic plans, goals, and risk posture in relation to the university’s mission.

In July 2018, IAD conducted an internal Risk Retreat to discuss the current risk assessment process and find ways to improve our process. The outcomes from the retreat were:

- New ways to hold strategic conversations with the campus community to allow IAD to be a trusted partner in identifying and balancing risks. This included discussing challenges that may prevent a unit from reaching its goals and also discussing dependencies in order to achieve unit goals
Better identification and definition of risks to assist in determining whether risks are auditable or should be monitored
Connected risk assessments into other IAD processes and engagements

All objective and subjective information and data gathered through our continuous RA process is analyzed when received. This on-going analysis process allows IAD to determine areas that may need immediate attention, areas that are potential near-term or future audits, and areas that we will continue to watch and monitor through our process.

**METRICS**

In Fiscal Year 2019, 22% of our engagements directly related to the 2019 Top Ten Risks or prior year’s Top Ten Risks identified by the University’s Strategic Risk Management program and the remaining 78% related to risks identified through IAD’s continuous risk assessment process. Risk areas covered by IAD engagements are shown below:
IAD worked on 64 engagements during FY2019. As our audit activities are continuous, 21 engagements were carried forward into Fiscal Year 2019 with substantial additional testing required on two of the engagements as a result of preliminary findings. Twenty engagements were added during the year and four engagements were returned to risk inventory because the risks were reassessed and determined to be lower than those of current investigations and new management requests. Below is a breakdown of the areas of IAD effort.
Our audit activities flow continuously from year to year; their life-cycles do not begin or end with the FY. The status of our engagements at the end of FY2019 is shown in the graph below. We will be carrying forward 21 engagements into Fiscal Year 2020.

Additionally, IAD follows up on all management corrective actions to recommendations reported in audit reports to ensure effective improvement. Below is the status of corrective actions at the end of FY2019; 63% of corrective actions were closed during the fiscal year.
IAD receives numerous allegations of wrong-doing through various sources. One source, the EthicsPoint (third-party) Hotline, is the central NCSU hotline that supplements existing reporting mechanisms within compliance units. With the departure of the University Compliance Manager from OGC, IAD has maintained the continuity of the EthicsPoint investigation process. This has ensured appropriate assignments of allegations to the correct compliance units to address complainant concerns.

Since 2014, there has been an upward trend in the number of reported allegations received and we expect this trend to continue into the future.
STAFF NEWS
At the end of FY2019, all team members have been in place for at least a year; the CAO and the Assistant Director have been at the university for 18 and 21 years, respectively. Combined, the unit has over 100 years of audit experience and 48 years of UNC audit experience. The stability of the team combined with longevity enables a deeper and more holistic understanding of the organization culturally, structurally, and operationally. In addition, it ensures a solid understanding of the risks inherent at a complex, Research 1, land-grant institution. All of our auditors have professional certifications including:

- Certified Compliance and Ethics Professional (CCEP)
- Certified Fraud Examiner (CFE)
- Certified Government Financial Manager (CGFM)
- Certified Internal Auditor (CIA)
- Certified Information Systems Auditor (CISA)
- Network + (Net+)
- Project Management Professional (PMP)

New Staff Appointment
Seth Miller, Information Technology Auditor, joined IAD in August 2018. He has over seven years of compliance and auditing experience in regulated industries. Seth started his career at RTI International focusing on governance, security, and compliance. He then moved to SAS where he was focused on compliance, operations, and auditing. Seth has a Bachelor of Science Degree in Business Administration with a concentration in Marketing from Appalachian State University. He also has CISA and Net+ certifications.

Staff Kudos, Professional Activities, and Recognition
M'Shiela Hawthorne was invited by the Office of State Budget and Management and its consultant, Visual Risk IQ, to be one of the two assistant trainers providing Tableau software training to University and State Agency auditors and other State Agency personnel. Two training sessions were conducted and provided data visualization techniques for procurement card transactions. This invitation was extended based on M'Shiela’s expertise in using Tableau for data analytics and ways to use the information to enhance audit work.

M'Shiela also earned her CIA certification in June. This credential is an internationally recognized designation. Congratulations M'Shiela!

CONCERNS FOR THE FUTURE
As noted by IAD’s QAR independent assessor:

- “One set back within IAD is staffing challenges and limitations; IAD has only six audit staff”
- “IAD is understaffed based on the most recent Office of State Budget and Management (OSBM) internal audit staffing analysis which concluded a need for a minimum of eight auditor positions…to cover the size of the institution, not the optimal number of positions.”
- “additional resources will improve IAD ability to meet the needs of their stakeholders and ensure proper controls are in place to mitigate risk within the University.”

Since 2008, IAD has maintained the same number of audit staff, which includes the Administrative Assistant, CAO, Assistant Director, and 5 auditors. Of the existing 5 auditors, one is part of IAD’s management team and has supervisory and strategic planning responsibilities, 1 FTE has been dedicated to investigations, and another position is dedicated to IT auditing, thus, leaving only 2 auditors to focus on all other areas.
<table>
<thead>
<tr>
<th>Engagement</th>
<th>On Original Fiscal Year 2019 Audit Plan?</th>
<th>Coverage of University Strategic Risks</th>
<th>Fiscal Year 2019 University Strategic Plan Goals</th>
<th>Status</th>
<th>Auditor Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>College of Natural Resources - Parks, Recreation, and Tourism Management Investigation</td>
<td>No - Carried Forward From Prior Year</td>
<td>Other - Prior Year Strategic Risk Employee Misconduct</td>
<td></td>
<td>Closed</td>
<td>The objectives of this audit were to: investigate the circumstances regarding the un-deposited receipts, determine the source of the funds, reconcile documentation to account for all of the funds, confirm reimbursement for personal purchases, and determine if there were any unreimbursed personal purchases made by the Director. Allegations were substantiated and corrective actions for the issues noted were fully and successfully implemented prior to the issuance of the report. Report issued 8/14/18.</td>
</tr>
<tr>
<td>College of Agriculture and Life Sciences - Department of Crop and Soil Sciences Investigation</td>
<td>No - Carried Forward From Prior Year</td>
<td>Other - Prior Year Strategic Risk Employee Misconduct</td>
<td></td>
<td>Closed</td>
<td>The objective of this audit was to investigate allegations from an internal source regarding the potential misuse of funds by a faculty member making inappropriate purchases on a PCard. Allegations were substantiated and corrective actions for the issues noted were fully and successfully implemented prior to the issuance of the report. Report issued 10/31/18.</td>
</tr>
<tr>
<td>Engagement</td>
<td>On Original Fiscal Year 2019 Audit Plan?</td>
<td>Coverage of University Strategic Risks</td>
<td>Fiscal Year 2019 University Strategic Plan Goals</td>
<td>Status</td>
<td>Auditor Comments</td>
</tr>
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<td>---------------------------------------------------------------------------</td>
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<td>-----------------------------------------------</td>
<td>-------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Office of Finance and Administration - Materials Management Division</td>
<td>No - Added</td>
<td>Other - Internal Audit Universe Risk - Governance</td>
<td></td>
<td>Closed</td>
<td>The objective of this audit was to determine if the employees were non-compliant with state, university, and college requirements and used their university positions to personally benefit by providing services to the university through undisclosed personal businesses. Allegations were unsubstantiated. Report issued 1/30/19.</td>
</tr>
<tr>
<td>Investigation</td>
<td></td>
<td>Other - Internal Audit Universe Risk - Regulatory Non-Compliance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>College of Agriculture and Life Sciences - Department of Food, Bioprocessing, and Nutrition Sciences Investigation</td>
<td>No - Carried Forward From Prior Year</td>
<td>Other - Prior Year Strategic Risk Employee Misconduct</td>
<td></td>
<td>Closed</td>
<td>The objectives of this investigation were to: determine if employees were instructed to falsify time records to delay payment of earned wages; determine if the employees were paid for all hours actually worked; and identify any non-compliance with federal, state, or university personnel requirements. Allegations were substantiated and corrective actions for the issues noted were fully and successfully implemented prior to the issuance of the report. Report issued 2/12/19.</td>
</tr>
<tr>
<td>College of Agriculture and Life Sciences - Department of Crop and Soil Sciences - Consortium Uniting People for Sustainability (CUPS) Investigation</td>
<td>No - Carried Forward From Prior Year</td>
<td>Other - Prior Year Strategic Risk Employee Misconduct</td>
<td></td>
<td>Closed</td>
<td>The objective of this audit was to investigate the fundraising activities and determine if they were legitimate, approved, and conducted in compliance with federal, state and university regulations. Allegations were substantiated and corrective actions for the issues noted were fully and successfully implemented prior to the issuance of the report. Report issued 2/14/19.</td>
</tr>
<tr>
<td>College of Humanities and Social Sciences - Department of Social Work Investigation</td>
<td>No - Added</td>
<td>Other - Employee Misconduct</td>
<td></td>
<td>Closed</td>
<td>The objective of this audit was to determine if the employees were non-compliant with state, university, and college requirements and used their university positions to personally benefit by providing services to the university through undisclosed personal businesses. Allegations were substantiated and corrective actions for the issues noted were fully and successfully implemented prior to the issuance of the report. Report issued 2/19/19.</td>
</tr>
</tbody>
</table>

**Key:**
- **Closed**
- **In Process**
- **Not Started**
- **On-Hold**
- **Returning to Continuous Risk Assessment**
- **Completed In Follow-up**
- **Canceled**
| Engagement                                                                 | On Original Fiscal Year 2019 Audit Plan? | Coverage of University Strategic Risks | Fiscal Year 2019 University Strategic Plan Goals | Status                        | Auditor Comments                                                                                                                                                                                                                                                                                                                                 |
|---------------------------------------------------------------------------|----------------------------------------|---------------------------------------|-----------------------------------------------|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------
<p>| Poole College of Management (PCOM) - Development and External Relations Investigation | No - Carried Forward From Prior Year   | Other - Prior Year Strategic Risk Employee Misconduct | 4. Pursue organizational excellence           | Complete - In Follow-up    | The objective of this audit was to investigate allegations from an internal source to determine if a PCOM employee inappropriately used a university-issued PCard for personal use. The allegation was substantiated and the unit is working on corrective action for 1 issue related to PCard transaction review. Report issued 10/9/18. Number of Audit Issues Remaining Open: 1 (corrective action in progress) Number of Audit Issues Closed: 0 |
| Office of Finance and Administration - Facilities - Utilities and Engineering (U&amp;E) Department - Timekeeping and Pay Investigation | No - Carried Forward From Prior Year   | Other - Internal Audit Universe Risk - Fraud | 4. Pursue organizational excellence           | Complete - In Follow-up    | The objectives of this investigation were to determine if: employees were paid incorrectly; employee access to Facilities Human Resources (HR), University HR, and University Payroll offices was restricted; University HR and University Payroll provided the U&amp;E Department and operators with adequate, transparent communication and support regarding timekeeping and pay; and, Facilities HR and the U&amp;E management provided operators with transparent communication and support regarding timekeeping and pay. The allegations were substantiated and the unit is working on corrective action for 1 issue related to insufficient communication and coordination from Facilities Human Resources following WolfTime Go-Live. Employee pay was corrected prior to issuance of the report. Report issued 2/19/19. Number of Audit Issues Remaining Open: 1 (corrective action in progress) Number of Audit Issues Closed: 0 |</p>
<table>
<thead>
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</thead>
<tbody>
<tr>
<td>College of Agriculture and Life Sciences - Prestage Department of Poultry Science - Feed Mill Education Unit Investigation [Phase 2]</td>
<td>No - Carried Forward From Prior Year</td>
<td>Other - Prior Year Strategic Risk Employee Misconduct</td>
<td>4. Pursue organizational excellence</td>
<td>Complete - In Follow-up</td>
<td>The objective of this investigation was to determine if the unit's purchase of a truck owned by the unit's manager was conducted in a manner that was transparent to university administration and in compliance with state and university requirements. The allegations were substantiated and unit is working on corrective actions for 3 issues related to manager intentionally misrepresented several facts to purchase vehicle, improper review of transactions, and culture of non-compliance. Report issued 2/19/19. Number of Audit Issues Remaining Open: 3 (corrective action in progress) Number of Audit Issues Closed: 0</td>
</tr>
</tbody>
</table>

| Other - Internal Audit Universe Risk - Fraud | Other - Internal Audit Universe Risk - Internal Controls | Other - Internal Audit Universe Risk - Regulatory Non-Compliance | Other - Internal Audit Universe Risk - Effectiveness and Efficiency of Processes |

**Key:**
- Closed
- In Process
- Not Started
- On-Hold
- Complete In Follow-up
- Canceled
- Returning to Continuous Risk Assessment
<table>
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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Campus Enterprises - NC State Dining - Vendor Processes Fraud Risk Assessment</td>
<td>Yes</td>
<td>3 - Data or Cyber Security Breach</td>
<td>4. Pursue organizational excellence</td>
<td>Complete - In Follow-up</td>
<td>The objectives of this fraud risk assessment were to: review Dining's manual and automated Information Technology (IT) vendor payment processes and internal controls for efficiency and effectiveness; identify potential risk areas; make recommendations to mitigate risks and improve internal controls and processes; and coordinate with Office of Information Technology, Security and Compliance to perform a security risk assessment on the automated parts of the process. Unit is working on corrective actions for 2 issues related to non-compliance with university IT security requirements and use of non-university vendor payment and accounting systems creating redundancy, extra work, and unnecessary risk. Report issued 3/12/19. Number of Audit Issues Remaining Open: 2 (corrective action in progress) Number of Audit Issues Closed: 0</td>
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<tr>
<td></td>
<td></td>
<td>Other - Prior Year Strategic Risk Employee Misconduct</td>
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<tr>
<td></td>
<td></td>
<td>Other - Internal Audit Universe Risk - Fraud</td>
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<td>Other - Internal Audit Universe Risk - Internal Controls</td>
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<td>Other - Internal Audit Universe Risk - Regulatory Non-Compliance</td>
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<tr>
<td></td>
<td></td>
<td>Other - Internal Audit Universe Risk - Effectiveness and Efficiency of Process</td>
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</table>

**Key:**
- **Closed**
- **In Process**
- **Not Started**
- **On-Hold**
- **Complete In Follow-up**
- **Canceled**
- **Returning to Continuous Risk Assessment**
### Engagement Details

#### Campus Enterprises - NC State Stores - Vendor Processes Fraud Risk Assessment
- **Status:** Complete - In Follow-up
- **Auditor Comments:**
  - The objectives of this fraud risk assessment were to: review Store's manual and automated Information Technology (IT) vendor payment processes and internal controls for efficiency and effectiveness; identify potential risk areas; make recommendations to mitigate risks and improve internal controls and processes; and coordinate with Office of Information Technology, Security and Compliance to perform a security risk assessment on the automated parts of the process.
  - Unit is working on corrective actions for 2 issues related to non-compliance with university IT security requirements and use of non-university vendor payment and accounting systems creating redundancy, extra work, and unnecessary risk.
  - Report issued 3/12/19.
  - Number of Audit Issues Remaining Open: 2 (corrective action in progress)
  - Number of Audit Issues Closed: 0

#### Non-Salary Year End Transfer of Expenses
- **Status:** In Process
- **Auditor Comments:**
  - The objective of the audit is to review the allowability, allocability, and appropriateness of selected non-salary year end transfers of expenses that were moved onto more restrictive projects and involved expense accounts we assessed as higher risk.

---

### Key Legend

- **Closed**
- **In Process**
- **Not Started**
- **On-Hold**
- **Returning to Continuous Risk Assessment**

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### NC State University Internal Audit Division
### Fiscal Year 2019 Audit Plan and Engagement Status
### As of June 28, 2019

<table>
<thead>
<tr>
<th>Engagement</th>
<th>On Original Fiscal Year 2019 Audit Plan?</th>
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<th>Fiscal Year 2019 University Strategic Plan Goals</th>
<th>Status</th>
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</tr>
</thead>
</table>
| Audit of Expenditures from Special Academic Program Resources | No - Carried Forward From Prior Year | Other - Internal Audit Universe Risk - Internal Controls | 1. Enhance student success | In Process | The objective of this audit is to:  
• Assess revenues for the special academic programs to determine if they are:  
  1. collected from the appropriate students and programs at the appropriate allowable amounts per term  
  2. following the students in accordance with the program  
• Assess whether expenditures are compliant with their approved purposes and adequate support documentation is available  
• Assess that appropriate processes and procedures are in place to establish responsibility and accountability at the colleges over the special academic program resources |
| College of Engineering - Materials Science and Engineering - Purchasing Investigation | No - Added | Other - Internal Audit Universe Risk - Internal Controls, Other - Internal Audit Universe Risk - Effectiveness and Efficiency of Process, Other - Internal Audit Universe Risk - Fraud | 4. Pursue Organizational Excellence | In Process | The objective of this audit is to determine if an employee:  
• Used their university PCard to pay for their personal cell phone data plan without approval  
• Made a MarketPlace purchase that appears to be items suited for a middle school students school supply list  
• Has made any additional purchases that appear to be of a personal nature. |

**Key:**
- Closed
- In Process
- Not Started
- On-Hold
- Complete In Follow-up
- Canceled
- Returning to Continuous Risk Assessment
### NC State University Internal Audit Division

**Fiscal Year 2019 Audit Plan and Engagement Status**

**As of June 28, 2019**

<table>
<thead>
<tr>
<th>Engagement</th>
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</thead>
<tbody>
<tr>
<td>College of Engineering - Materials Science and Engineering - Vendor Management Investigation</td>
<td>No - Added</td>
<td>Other - Prior Year Strategic Risk Employee Misconduct</td>
<td>4. Pursue organizational excellence</td>
<td>In Process</td>
<td>The objective of this audit is to investigate allegations from an internal source about possible conflict of interest, pre-payment of a contract, and misuse of university funds and employee time.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other - Internal Audit Universe Risk - Fraud</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td>Other - Internal Audit Universe Risk - Internal Controls</td>
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<tr>
<td></td>
<td></td>
<td>Other - Internal Audit Universe Risk - Regulatory Non-Compliance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>College of Engineering - Materials Science and Engineering - Investigation of a Faculty Member's Research Administration Activities</td>
<td>No - Added</td>
<td>Other - Prior Year Strategic Risk Employee Misconduct</td>
<td>4. Pursue organizational excellence</td>
<td>In Process</td>
<td>The objective of this audit is to investigate a faculty member's research administration activities for potential conflicts of interest and misuse of university and federal grant assets and resources.</td>
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<td>Other - Internal Audit Universe Risk - Regulatory Non-Compliance</td>
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<td>Other - Internal Audit Universe Risk - Fraud</td>
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<tr>
<td>College of Engineering - NC Clean Energy Technology Center Investigation</td>
<td>No - Added</td>
<td>Other - Prior Year Strategic Risk Employee Misconduct</td>
<td></td>
<td>In Process</td>
<td>The objective of this audit is to determine if employee’s involvement with 3rd party consultant is appropriate and in compliance with university policies.</td>
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<td>Other - Internal Audit Universe Risk - Regulatory Non-Compliance</td>
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**Key:**
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<tr>
<td>Review of Corrective Actions for National Science Foundation (NSF) 2018 Performance Audit of Incurred Costs</td>
<td>Yes</td>
<td>Other - Internal Audit Universe Risk - Regulatory Non-Compliance</td>
<td>In Process</td>
<td>The objective of this audit is to perform follow-up of corrected actions for audit issues reported in the May 18, 2018 NSF Office of the Inspector General audit.</td>
<td></td>
</tr>
<tr>
<td>College of Sciences (COS) - General Information Technology (IT) Controls</td>
<td>Yes</td>
<td>Other - Internal Audit Universe Risk - Internal Controls</td>
<td>In Process</td>
<td>The objective of this audit is to evaluate governance over and effectiveness of IT controls within COS IT operations. Governance includes the organizational and administrative structure of the IT function, IT strategic decision-making, the existence of policies and procedures, availability of staff and their skills, and the overall controls in the environment. Controls include security management, change management, configuration management, contingency planning, and vulnerability management.</td>
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<td>Other - Internal Audit Universe Risk - Effectiveness and Efficiency of Process</td>
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<tr>
<td>College of Agriculture and Life Sciences (CALS) - Cooperative Extension Services (CES) - Business Process Governance</td>
<td>Yes</td>
<td>Other - Internal Audit Universe Risk - Internal Controls</td>
<td>4. Pursue organizational excellence</td>
<td>In Process</td>
<td>The objective of the audit is to review the business processes and structures implemented by CALS NC State Extension leadership to inform, direct, manage, and monitor CES activities toward the achievement of its strategic goals.</td>
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<td>Other - Internal Audit Universe Risk - Regulatory Non-Compliance</td>
<td>5. Engage locally and globally</td>
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<td>Other - Internal Audit Universe Risk - Governance</td>
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<tr>
<td>College of Agriculture and Life Sciences (CALS) - Prestage Department of Poultry Science</td>
<td>No - Added</td>
<td>Other - Internal Audit Universe Risk - Internal Controls</td>
<td>4. Pursue organizational excellence</td>
<td>In Process</td>
<td>The objectives of this audit are to evaluate the efficiency and effectiveness of the department; review internal controls; and, assess compliance with federal, state, university and CALS policies and procedures.</td>
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<td>Other - Internal Audit Universe Risk - Effectiveness and Efficiency of Process</td>
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<tr>
<td>Office of Finance and Administration - Environmental Health and Public Safety (SAT) - Physical Access Services</td>
<td>Yes</td>
<td>Other - Internal Audit Universe Risk - Internal Controls</td>
<td>In Process</td>
<td>In Process</td>
<td>The objective of this audit is to test financial expenditures at the end of federal grant awards for allowability, allocability, reasonableness, and compliance with applicable regulations and provisions of the award agreements. This audit was returned to the Continuous Risk Assessment process based on the annual reassessment of the audit plan.</td>
</tr>
<tr>
<td>Title IX Governance Processes</td>
<td>Yes</td>
<td>Other - Internal Audit Universe Risk - Effectiveness and Efficiency of Process</td>
<td>On-Hold</td>
<td>On-Hold</td>
<td>The objective of this audit was to assess the effectiveness of the governance over activities within Title IX processes within the NCSU Office for Institutional Equity and Diversity. This engagement was placed on hold due to temporarily limited resources and higher priority engagements.</td>
</tr>
<tr>
<td>Grant Expenses at Award End</td>
<td>Yes</td>
<td>Other - Internal Audit Universe Risk - Regulatory Non-Compliance</td>
<td>Returned to Continuous Risk Assessment</td>
<td>Returned to Continuous Risk Assessment</td>
<td>The objective of this audit was to test financial expenditures at the end of federal grant awards for allowability, allocability, reasonableness, and compliance with applicable regulations and provisions of the award agreements. This audit was returned to the Continuous Risk Assessment process based on the annual reassessment of the audit plan.</td>
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<tr>
<td>Hiring Process - Controls to Prevent Unallowable Hires</td>
<td>Yes</td>
<td></td>
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<td>Returned to Continuous Risk Assessment</td>
<td>The objective of this audit was to review the effectiveness of the university's hiring process controls to prevent unallowable hires such as persons trespassed from the university or flagged as &quot;Do Not Hire&quot; due to prior disciplinary actions. This audit was returned to the Continuous Risk Assessment process based on the annual reassessment of the audit plan.</td>
</tr>
<tr>
<td>Office of Finance and Administration - Facilities - Small Construction Award Process</td>
<td>Yes</td>
<td></td>
<td></td>
<td>Returned to Continuous Risk Assessment</td>
<td>The objective of this audit was to review Facilities small construction contract awards for favoritism or conflict of interest. This audit was returned to the Continuous Risk Assessment process based on the annual reassessment of the audit plan.</td>
</tr>
<tr>
<td>College of Humanities and Social Sciences - Institute for Nonprofits - Business Processes</td>
<td>Yes</td>
<td></td>
<td></td>
<td>Returned to Continuous Risk Assessment</td>
<td>The objective of this audit was to evaluate effectiveness and efficiency of business processes and compliance to federal, state, and university requirements. This audit was returned to the Continuous Risk Assessment process based on the annual reassessment of the audit plan.</td>
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**CURRENT YEAR AUDIT FOLLOW-UP**

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<tr>
<td>Poole College of Management (PCOM) - Development and External Relations Investigation - Follow-up</td>
<td>No - Added</td>
<td>Other - Prior Year Strategic Risk Employee Misconduct</td>
<td>4. Pursue organizational excellence</td>
<td>Closed</td>
<td>The objective of this audit was to investigate allegations from an internal source to determine if a PCOM employee inappropriately used a university-issued PCard for personal use. 1 issue was noted related to inadequate PCard transaction review. Original report issued 10/9/18. Follow-up completed 6/7/19.</td>
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<tr>
<td>Office of Finance and Administration - Facilities - Utilities and Engineering (U&amp;E) Department - Timekeeping and Pay Investigation - Follow-up</td>
<td>No - Added</td>
<td>Other - Internal Audit Universe Risk - Effectiveness and Efficiency of Process</td>
<td>4. Pursue organizational excellence</td>
<td>Closed</td>
<td>The objectives of this investigation were to determine: if employees paid incorrectly; employee access to Facilities Human Resources (HR), University HR, and University Payroll offices was restricted; if University HR and University Payroll provided the U&amp;E Department and operators with adequate transparent communication and support regarding timekeeping and pay; and whether Facilities HR and the U&amp;E management provided operators with transparent communication and support regarding timekeeping and pay. The allegations were substantiated and unit is working on corrective action for 1 issue was noted related to insufficient communication and coordination from Facilities Human Resources following WolfTime Go-Live. Employee pay was corrected prior to issuance of the report. Original Report issued 2/19/19. Follow-up completed 6/7/19.</td>
</tr>
<tr>
<td>College of Agriculture and Life Sciences - Prestage Department of Poultry Science - Feed Mill Education Unit Investigation Follow-up (Phase 2)</td>
<td>No - Added</td>
<td>Other - Prior Year Strategic Risk Employee Misconduct</td>
<td>4. Pursue organizational excellence</td>
<td>In Process</td>
<td>The objective of this investigation was to determine if the unit's purchase of a truck owned by the unit's manager was conducted in a manner that was transparent to university administration and in compliance with state and university requirements. 3 issues were noted related to manager intentionally misrepresented facts to purchase vehicle, improper review of transactions, and culture of non-compliance. Report issued 2/19/19. Number of Audit Issues Remaining Open: 3 (corrective action in progress) Number of Audit Issues Closed: 0</td>
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<tr>
<td>Campus Enterprises - NC State Dining - Vendor Processes Fraud Risk Assessment</td>
<td>No - Added</td>
<td>3 - Data or Cyber Security Breach, Other - Prior Year Strategic Risk Employee Misconduct, Other - Internal Audit Universe Risk - Fraud, Other - Internal Audit Universe Risk - Internal Controls, Other - Internal Audit Universe Risk - Regulatory Non-Compliance, Other - Internal Audit Universe Risk - Effectiveness and Efficiency of Process</td>
<td>4. Pursue organizational excellence</td>
<td>In Process</td>
<td>The objectives of this fraud risk assessment were to: review Dining’s manual and automated Information Technology (IT) vendor payment processes and internal controls for efficiency and effectiveness; identify potential risk areas; make recommendations to mitigate risks and improve internal controls and processes; and coordinate with Office of Information Technology, Security and Compliance to perform a security risk assessment on the automated parts of the process. Unit is working on corrective actions for 2 issues related to non-compliance with university IT security requirements and use of non-university vendor payment and accounting systems creating redundancy, extra work, and unnecessary risk. Report issued 3/12/19. Number of Audit Issues Remaining Open: 2 (corrective action in progress) Number of Audit Issues Closed: 0</td>
</tr>
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### Key
- Closed
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### NC STATE UNIVERSITY INTERNAL AUDIT DIVISION

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| Campus Enterprises - NC State Stores - Vendor Processes Fraud Risk Assessment | No - Added                             | 3 - Data or Cyber Security Breach     | 4. Pursue organizational excellence            | In Process   | The objectives of this fraud risk assessment were to: review Store's manual and automated Information Technology (IT) vendor payment processes and internal controls for efficiency and effectiveness; identify potential risk areas; make recommendations to mitigate risks and improve internal controls and processes; and coordinate with Office of Information Technology, Security and Compliance to perform a security risk assessment on the automated parts of the process.
|                                                                           |                                        | Other - Prior Year Strategic Risk Employee Misconduct |                                               |              | Unit is working on corrective actions for 2 issues related to non-compliance with university IT security requirements and use of non-university vendor payment and accounting systems creating redundancy, extra work, and unnecessary risk. |
|                                                                           |                                        | Other - Internal Audit Universe Risk - Fraud |                                               |              | Report issued 3/12/19. |
|                                                                           |                                        | Other - Internal Audit Universe Risk - Internal Controls |                                               |              | Number of Audit Issues Remaining Open: 2 (corrective action in progress) |
|                                                                           |                                        | Other - Internal Audit Universe Risk - Regulatory Non-Compliance |                                               |              | Number of Audit Issues Closed: 0 |
|                                                                           |                                        | Other - Internal Audit Universe Risk - Effectiveness and Efficiency of Process |                                               |              |                               |

### PRIOR YEARS' AUDIT FOLLOW-UP

<table>
<thead>
<tr>
<th>College of Sciences - Marine, Earth and Atmospheric Sciences (MEAS) Investigation - Follow-up</th>
<th>No - Carried Forward From Prior Year</th>
<th>Other - Internal Audit Universe Risk - Internal Controls</th>
<th>4. Pursue organizational excellence</th>
<th>Closed</th>
<th>The objective of the audit was to determine if use of MEAS educational technology fee funds to pay for the reported salaries and severance pay were in compliance with university policy. 1 issue related to inadequate guidance.</th>
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<td>Other - Internal Audit Universe Risk - Effectiveness and Efficiency of Process</td>
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<tr>
<td>College of Agriculture and Life Sciences - Animal Science Department Investigation - Follow-up</td>
<td>No - Carried Forward From Prior Year</td>
<td>10 - Sexual Violence or Other Serious Crime&lt;br&gt;Other - Prior Year Strategic Risk Employee Misconduct&lt;br&gt;Other - Internal Audit Universe Risk - Fraud&lt;br&gt;Other - Internal Audit Universe Risk - Internal Controls&lt;br&gt;Other - Internal Audit Universe Risk - Regulatory Non-Compliance</td>
<td>Closed</td>
<td></td>
<td>The objectives of the investigation were to: determine if misuse of university funds by the faculty member occurred, review the administration of the student's interdisciplinary program for compliance with university policies, and assess the process for reporting and investigating concerning behavior. 2 issues related to student organization financial training and university procedures for reporting concerning behavior. Original report issued 10/16/17. Follow-up completed 11/6/18.</td>
</tr>
<tr>
<td>College of Agriculture and Life Sciences - Prestage Department of Poultry Science - Feed Mill Education Unit Investigation - Follow-up [Phase 1]</td>
<td>No - Carried Forward From Prior Year</td>
<td>Other - Prior Year Strategic Risk Employee Misconduct&lt;br&gt;Other - Internal Audit Universe Risk - Fraud&lt;br&gt;Other - Internal Audit Universe Risk - Internal Controls&lt;br&gt;Other - Internal Audit Universe Risk - Regulatory Non-Compliance</td>
<td>Closed</td>
<td></td>
<td>The objective of this investigation was to determine if the employee's PCard transactions complied with state and university purchasing and PCard policies. 1 issue related to inadequate PCard transaction review. Original report issued 4/16/18. Follow-up completed 1/11/19.</td>
</tr>
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<tr>
<td>Campus Enterprises - NCSU Dining Timesheet Investigation - Follow-up</td>
<td>Yes</td>
<td>Other - Prior Year Strategic Risk - Employee Misconduct</td>
<td></td>
<td>Closed</td>
<td>The objective of this audit was to investigate the allegations of manipulation of employee timesheets by the unit supervisors and determine if timekeeping procedures within University Dining were in compliance with all federal, state, and university requirements. 3 issues related to inconsistent application of policy, insufficient documentation, and lack of audit trail for changes to employee time punches. Original report issued 3/15/18. Follow-up completed 1/15/19.</td>
</tr>
<tr>
<td>University Employee Time and Leave Management - Follow-up</td>
<td>No - Carried Forward From Prior Year</td>
<td>Other - Internal Audit Universe Risk - Internal Controls</td>
<td>4. Pursue organizational excellence</td>
<td>Closed</td>
<td>The objective of this audit was to test compliance to FLSA requirements in relation to employee compensatory and overtime hours earned. This was accomplished by evaluating the adequacy and effectiveness of controls for time and leave management to ensure that: compensatory time and overtime were calculated and paid in accordance with FLSA, compensatory time and overtime were accurately recorded on timesheets and within the Web Leave and Human Resources Systems, respectively, and timesheets were approved prior to payment and retained according to retention requirements. 8 issues related to incorrect payroll payments to employees, timesheet standardization and guidance, aged out compensatory time reporting process, hiring processes, holiday pay, compensatory leave, and incorrect full time equivalency status. Original Report issued 9/15/16. Follow-up completed 6/7/19.</td>
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<td>College of Agriculture and Life Sciences (CALS) - Business Processes - Follow-up</td>
<td>Yes</td>
<td>Other - Internal Audit Universe Risk - Internal Controls</td>
<td>4. Pursue organizational excellence</td>
<td>Closed</td>
<td>The objective of this audit was to review internal controls and effectiveness of the CALS business processes as related to previous investigations and to determine the status of other improvements in areas where corrective action was needed. 5 issues related to procedures for: financial oversight, monitoring and oversight of personnel charges, additional compensation payments, salary redistributions, and administration of faculty departures. Original Report issued 4/19/17. Follow-up completed 6/7/19.</td>
</tr>
<tr>
<td>User Controls Over Ultra-Sensitive Data - Follow-up</td>
<td>Yes</td>
<td>3 - Data or Cyber Security Breach</td>
<td>4. Pursue organizational excellence</td>
<td>In Process</td>
<td>The objectives of this audit were to: determine whether university users with access to ultra-sensitive data are adequately protecting the data throughout business process lifecycles; identify - to the extent possible - previously unknown areas where ultra-sensitive data is transmitted and stored; and, assess whether current university ultra-sensitive data users have a legitimate business need for the data. 23 issues related to guidance, training, storage, retention, verification processes, access, and approval processes. Original Report issued 3/26/18. Number of Audit Issues Remaining Open: 12 (corrective action in progress) Number of Audit Issues Closed: 11</td>
</tr>
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<tr>
<td>College of Agriculture and Life Sciences (CALS) - Warren County Cooperative Extension Service (CES)</td>
<td>No - Carried Forward From Prior Year</td>
<td>Other - Prior Year Strategic Risk Employee Misconduct</td>
<td></td>
<td>Closed</td>
<td>Consulted with the CALS Human Resources, CES and Warren County CES regarding a potential mishandling of funds.</td>
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<td>Other - Internal Audit Universe Risk - Fraud</td>
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<tr>
<td>College of Agriculture and Life Sciences (CALS) - Scotland County Cooperative Extension Service (CES)</td>
<td>No - Added</td>
<td>Other - Internal Audit Universe Risk - Internal Controls</td>
<td></td>
<td>Closed</td>
<td>Consulted with CES Director to evaluate processes and financial controls related to the CES checking accounts and reviewed the 4-H account transactions for appropriateness.</td>
</tr>
<tr>
<td>College of Agriculture and Life Sciences - Integrated Pest Management Research</td>
<td>Yes</td>
<td>Other - Internal Audit Universe Risk - Internal Controls</td>
<td></td>
<td>Closed</td>
<td>Consulted with Integrated Pest Management Research management regarding an issue with non-compliance with university policy on compensation and implementation of improvements.</td>
</tr>
<tr>
<td>Office of the State Auditor (OSA) Information Technology (IT) General Controls Audit</td>
<td>Yes</td>
<td>3 - Data or Cyber Security Breach</td>
<td></td>
<td>Closed</td>
<td>Consulted with the Office of Information Technology - Security and Compliance to facilitate OSA's audit of NCSU's IT General Controls. The State Auditor's audit included review and consideration of Internal Audit IT audit reports and documented issues to avoid duplication of effort as appropriate.</td>
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<th>Fiscal Year 2019 University Strategic Plan Goals</th>
<th>Status</th>
<th>Auditor Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>NC State Wolf Pack Club Consulting</td>
<td>No - Added</td>
<td>Other - Internal Audit Universe Risk - Internal Controls</td>
<td></td>
<td>Closed</td>
<td>Consulted with NC State Wolf Pack Club regarding employee salary payments.</td>
</tr>
<tr>
<td>Office of Global Engagement - NC State European Center in Prague Information Technology (IT)</td>
<td>No - Added</td>
<td>Other - Internal Audit Universe Risk - Effectiveness and Efficiency of Process Other - Internal Audit Universe Risk - Identification and Risk Management</td>
<td>5. Engage locally and globally</td>
<td>Closed</td>
<td>Consulted with the Office of Global Engagement Associate Director for NC State European Center in Prague to assist in determining IT needs in Prague as their current support contract ended in December 2018.</td>
</tr>
<tr>
<td>College of Agriculture and Life Sciences - Prestage Department of Poultry Science - Chicken Education Unit - Consulting</td>
<td>No - Added</td>
<td>Other - Internal Audit Universe Risk - Regulatory Non-Compliance</td>
<td></td>
<td>Closed</td>
<td>Consulted with Sponsored Programs and Regulatory Compliance Services, Director of Compliance regarding a potential conflict of interest. Consultation closed 1/10/19. Audit engagement opened; see College of Agriculture and Life Sciences (CALS) - Prestage Department of Poultry Science on page 10.</td>
</tr>
</tbody>
</table>

**Key:**
- **Closed**
- **In Process**
- **Not Started**
- **On-Hold**
- **Complete In Follow-up**
- **Canceled**
- **Returning to Continuous Risk Assessment**

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## NC STATE UNIVERSITY INTERNAL AUDIT DIVISION
### FISCAL YEAR 2019 AUDIT PLAN AND ENGAGEMENT STATUS
#### AS OF JUNE 28, 2019

<table>
<thead>
<tr>
<th>Engagement</th>
<th>On Original Fiscal Year 2019 Audit Plan?</th>
<th>Coverage of University Strategic Risks</th>
<th>Fiscal Year 2019 University Strategic Plan Goals</th>
<th>Status</th>
<th>Auditor Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>WolfTime Post-Implementation</td>
<td>No - Added</td>
<td>Other - Internal Audit Universe Risk - Internal Controls</td>
<td></td>
<td>Closed</td>
<td>Consulted with Human Resources regarding the post-implementation of WolfTime.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other - Internal Audit Universe Risk - Effectiveness and Efficiency of Process</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other - Internal Audit Universe Risk - Regulatory Non-Compliance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research Administration Systems Replacement - ERA (Enterprise Research Administration)</td>
<td>Yes</td>
<td>3 - Data or Cyber Security Breach</td>
<td>3. Support interdisciplinary scholarship</td>
<td>In Process</td>
<td>Providing advisory and consulting services to the Office of Research and Innovation and the Office of Finance and Administration on their replacement of 4 legacy systems used for enterprise research administration activities.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other - Internal Audit Universe Risk - Internal Controls</td>
<td>4. Pursue organizational excellence</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other - Internal Audit Universe Risk - Effectiveness and Efficiency of Process</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other - Internal Audit Universe Risk - Identification and Risk Management</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Key:**
- Complete In Follow-up
- Closed
- In Process
- Not Started
- On-Hold
- Returning to Continuous Risk Assessment

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## NC State University Internal Audit Division
### Fiscal Year 2019 Audit Plan and Engagement Status
#### As of June 28, 2019

<table>
<thead>
<tr>
<th>Engagement</th>
<th>On Original Fiscal Year 2019 Audit Plan?</th>
<th>Coverage of University Strategic Risks</th>
<th>Fiscal Year 2019 University Strategic Plan Goals</th>
<th>Status</th>
<th>Auditor Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implementation of Accounts Payable Vendor Management System</td>
<td>Yes</td>
<td>Other - Internal Audit Universe Risk - Fraud</td>
<td>4. Pursue organizational excellence</td>
<td>In Process</td>
<td>Consulting with the University Controller's Office on their implementation of a vendor management system application.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other - Internal Audit Universe Risk - Internal Controls</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other - Internal Audit Universe Risk - Effectiveness and Efficiency of Process</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health Insurance Portability and Accountability Act (HIPAA) Security Implementation Project</td>
<td>No - Added</td>
<td>3 - Data or Cyber Security Breach</td>
<td>4. Pursue organizational excellence</td>
<td>In Process</td>
<td>Consulting with Office of Information Technology - Security and Compliance on implementation of recommendations from an outside consultant to ensure all risk areas identified are addressed.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other - Internal Audit Universe Risk - Regulatory Non-Compliance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other - Internal Audit Universe Risk - Internal Controls</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other - Internal Audit Universe Risk - Internal Controls</td>
<td></td>
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</tbody>
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### Key:
- **Closed**
- **In Progress**
- **Not Started**
- **On-Hold**
- **Complete Follow-up**
- **Canceled**
- **Returning to Continuous Risk Assessment**
## A QAR is mandated by the Institute of Internal Auditors (IIA) Professional Standards and by the State of NC for all internal audit units every five years. The principal objectives of the QAR were to: assess the internal audit activity’s conformance to The Institute of Internal Auditors’ (IIA) Standards, evaluate the internal audit activity’s effectiveness in carrying out its mission as set forth in its charter and expressed in the expectations of the University’s Board of Trustees and university executive leaders, identify opportunities to enhance its management and work processes, and provide suggestions to enhance the audit function’s value to the university. IAD performed a comprehensive self-assessment and identified opportunities to document or improve documentation of processes that were already in practice. It is our overall opinion that the NCSU Internal Audit Division generally conforms to the IIA Standards and Code of Ethics.
<table>
<thead>
<tr>
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<th>Auditor Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality Assurance Review (QAR) - Independent Validation</td>
<td>No - Carried Forward From Prior Year</td>
<td>N/A</td>
<td>4. Pursue organizational excellence</td>
<td>Closed</td>
<td>A QAR is mandated by the Institute of Internal Auditors Professional Standards and by the State of NC for all internal audit units every five years. The primary objective of the validation, conducted July 12 – July 30, 2018, was to verify the assertions made in the self-assessment report concerning adequate fulfillment of the organization’s basic expectations of the internal audit function and its conformity to IIA’s Professional Standards. The independent assessor issued a report on August 23, 2018 and agreed with the internal assessment’s conclusion that the NCSU Internal Audit Division generally complies with the IIA Standards. It was also noted that IAD implemented agile auditing, which allows IAD to direct time and effort toward the issues, challenges, and risks that most affect the university’s ability to implement strategy and achieve goals. This has been accomplished through leveraging technology and data analytics across the audit life cycle to: provide broader-based, more dynamic audit scopes; streamline IAD audit processes and procedures; increase IAD’s services despite limited staffing resources; and, deliver more relevant, higher impact services. One set back within IAD is the limited audit staff. Report received from reviewer 8/23/18. Presented in BOT materials September 20, 2018.</td>
</tr>
<tr>
<td>Health Insurance Portability and Accountability Act (HIPAA) Security Assessment</td>
<td>No - Carried Forward From Prior Year</td>
<td>3 - Data or Cyber Security Breach</td>
<td>Closed</td>
<td>Collaborated with Office of Information Technology - Security and Compliance and the HIPAA Compliance Sub-working Group to facilitate a complete HIPAA security assessment and privacy review to evaluate the effectiveness of internal controls for protecting sensitive data in the five HIPAA covered health care components at NC State.</td>
<td></td>
</tr>
</tbody>
</table>

**Key:**
- **Closed**
- **In Process**
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- **Complete In Follow-up**
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</tr>
</thead>
<tbody>
<tr>
<td>Office of Global Engagement - Financial Operations Manager Search Committee</td>
<td>No - Added</td>
<td>N/A</td>
<td></td>
<td>Closed</td>
<td>Chief Audit Officer &amp; Director was on the search committee for the Office of Global Engagement - Financial Operations Manager.</td>
</tr>
<tr>
<td>National Institute of Standards and Technology (NIST) 800-171 Compliance Steering Team</td>
<td>Yes</td>
<td>3 - Data or Cyber Security Breach</td>
<td>3. Support interdisciplinary scholarship</td>
<td>Closed</td>
<td>Internal Audit Division provided advisory and consulting services to the Office of Research and Innovation, Office of Finance and Administration, Office of General Counsel, and Office of Information Technology as they developed a collaborative compliance process to assist the university in achieving its research goals while maintaining compliance with NIST 800-171 &quot;Protecting Controlled Unclassified Information in Nonfederal Information Systems and Organizations&quot; and NIST 800-53 &quot;Security and Privacy Controls for Federal Information Systems and Organizations.&quot;</td>
</tr>
<tr>
<td>University Information Technology (IT) Governance Committees</td>
<td>Yes</td>
<td>Other - Internal Audit Universe Risk - Governance</td>
<td></td>
<td>Closed</td>
<td>Internal Audit Division provided objective, independent input to various university IT committees as they recommended and implemented IT policies and technology to ensure the best possible decisions in advancing the use of technology meets the university’s mission, vision, and goals.</td>
</tr>
<tr>
<td>Business Operations Group - 2019 Steering Committee</td>
<td>No - Added</td>
<td>Other - Internal Audit Universe Risk - Effectiveness and Efficiency of Process</td>
<td>4. Pursue organizational excellence</td>
<td>Closed</td>
<td>Chief Audit Officer &amp; Director was on the steering committee for the Business Operations Group. The objectives and responsibilities of this steering committee were to: Advise the Vice Chancellor, Finance and Administration about planning for the Business Operations Group meetings, represent all colleges and units in suggesting potential topics and speakers, evaluate the effectiveness of the Business Operations Group meetings and suggest improvements, and actively participate in Business Operations Group Meetings.</td>
</tr>
</tbody>
</table>

**Key:**
- Complete In Follow-up
- Closed
- In Process
- Not Started
- On-Hold
- Re-Assessment
## ENGAGEMENT ON ORIGINAL FISCAL YEAR 2019 AUDIT PLAN?

<table>
<thead>
<tr>
<th>Engagement</th>
<th>On Original Fiscal Year 2019 Audit Plan?</th>
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<th>Fiscal Year 2019 University Strategic Plan Goals</th>
<th>Status</th>
<th>Auditor Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Analytics Internal Project</td>
<td>No - Added</td>
<td>N/A</td>
<td>1. Enhance student success</td>
<td>Closed</td>
<td>Internal Audit used data analytics software to identify anomalies, trends, and risks within financial business processes such as purchasing and journal entries. The majority of staff have been trained in the use of this software, including our student intern. This supplemented current audit activities with more efficient analysis and quicker turnaround of corrective actions. Auditors presented practical applications to NCSU accounting students of how data visualization can be used in conducting audits and reporting results.</td>
</tr>
<tr>
<td>University Compliance and Integrity Initiative</td>
<td>Yes</td>
<td>Other - Internal Audit Universe Risk - Governance</td>
<td></td>
<td>Closed</td>
<td>Collaborated with Compliance Manager office to enhance university-wide compliance activities by increasing collaboration and expanding reporting opportunities for student, faculty, and staff for ethical or compliance related concerns. The goal was to provide a positive compliance experience, to provide compliance educational opportunities, and create and provide quality resources that will optimize compliance activity.</td>
</tr>
</tbody>
</table>

### Key:
- **Closed**
- **In Process**
- **Not Started**
- **On-Hold**
- **Complete In Follow-up**
- **Canceled**
- **Returning to Continuous Risk Assessment**
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<tr>
<th>Engagement</th>
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<th>Coverage of University Strategic Risks</th>
<th>Fiscal Year 2019 University Strategic Plan Goals</th>
<th>Status</th>
<th>Auditor Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power America Information Technology (IT) Security Assessment</td>
<td>No - Carried Forward From Prior Year</td>
<td>3 - Data or Cyber Security Breach</td>
<td>In Process</td>
<td>Collaborating with Office of Information Technology - Security and Compliance (OIT S&amp;C) to assess the effectiveness of the Power America Information Technology Security and Compliance Program implementation. Assessment complete, waiting for OIT S&amp;C to issue final report.</td>
<td></td>
</tr>
<tr>
<td>Office of Finance and Administration - Vice Chancellor Search Committee</td>
<td>No - Added</td>
<td>N/A</td>
<td>In Process</td>
<td>Chief Audit Officer &amp; Director is on the search committee for the Vice Chancellor for Finance and Administration.</td>
<td></td>
</tr>
</tbody>
</table>

**CONTINUOUS RISK ASSESSMENT AND AUDIT PLANNING**

- Continuous Risk Assessment and Audit Planning: Yes, N/A, Closed
- **Key:**
  - Complete
  - In Follow-up
  - Canceled
  - Returning to Continuous Risk Assessment
  - In Process
  - Not Started
  - On-Hold

All team members visit faculty and staff across the university throughout the year to discuss their unit’s strategic plans, goals, and risk posture in relation to the University’s Mission. This includes new and on-going activities related to their academic, research, and outreach missions and potential concerns or emerging risks to both strategic and tactical goals at the unit and university level. This process supports the identification of potential audit and consulting engagements and is used as an objective tool in the development of our Annual Audit Plan.
Continuous Risk Assessment and Audit Planning Process

Risk Inventory
- Strategic conversation meetings
- Informal conversations
- Out of scope items from audit fieldwork
- Allegations/hotline
- State & Federal audits
- Trends in higher education

Audit Planning
 Begins in February

Risk Ranking
Risk Criteria
- Compliance
- Financial
- Fraud
- Operational
- Reputational
- Security

Capacity Analysis
Estimate project hours per potential audit
Estimate hours for follow-ups, investigations, etc.
Estimate FTE resources

Audit Plan
Potential audits with highest risk scores within capacity
Potential audits that do not make the plan

List of potential audits
Likelihood & impact severity analysis
Subjective Analysis
Final score for each potential audit

Monitor
Mitigated
## Audits

<table>
<thead>
<tr>
<th>Title</th>
<th>Description</th>
</tr>
</thead>
</table>
| Administration and Compliance Over Salary Supplements                | • Administration of supplemental salary  
• University-wide compliance to requirements |
| College of Humanities and Social Sciences - Institute for Nonprofits - Business Processes | • Financial business processes, governance, and internal controls  
• Efficiency and effectiveness  
• Compliance with federal, state, and university requirements |
| Office of Finance and Administration – Facilities – Informal Construction Contracts Award Process | • Compliance with the bid rules for informal construction contracts  
• Evaluate trends in award decisions |
| Poole College of Management - Financial Business Processes            | • Financial business processes, governance, and internal controls  
• Efficiency and effectiveness  
• Compliance with federal, state, and university requirements  
• Includes follow-up work on issues found in fiscal year 2019 audit engagements  
  o Audit of Expenditures from Special Academic Program Resources  
  o Non-Salary Year End Transfer of Expenses |
| Wilson College of Textiles - Nonwovens Institute - Business Processes | • Financial business processes, governance, and internal controls  
• Efficiency and effectiveness  
• Compliance with federal, state, and university requirements |

## Information Technology Audits

<table>
<thead>
<tr>
<th>Title</th>
<th>Description</th>
</tr>
</thead>
</table>
| Office of Finance and Administration - Facilities - Energy Management Systems - Cyber Security for University Power and Water Systems | • Effectiveness of information technology security and controls  
• Comprehensiveness of policies and procedures |
### Fiscal Year 2019 Engagements Anticipated to be in Progress on July 1, 2019

- College of Agriculture and Life Sciences - Prestage Department of Poultry Science
- Title IX Governance Processes
- Office of Finance and Administration - Environmental Health and Public Safety - Security Applications and Technologies - Physical Access Services

### Investigations

The Audit Plan includes estimated time for initial analysis of allegations reported through the Internal Audit Division Hotline, Ethics Point Hotline, the Office of the State Auditor Hotline, or other internal and external sources and subsequent investigation.

### Prior Years’ Follow-up Anticipated to be in Progress on July 1, 2019

- Campus Enterprises - NC State Dining - Vendor Processes Fraud Risk Assessment
- Campus Enterprises - NC State Stores - Vendor Processes Fraud Risk Assessment
- College of Agriculture and Life Sciences - Prestage Department of Poultry Science - Feed Mill Education Unit Investigation [Phase 2]
- User Controls Over Ultra-Sensitive Data
## Planned Follow-up

<table>
<thead>
<tr>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audit of Expenditures from Special Academic Program Resources</td>
</tr>
<tr>
<td>College of Agriculture and Life Sciences - Cooperative Extension Services</td>
</tr>
<tr>
<td>- Business Process Governance</td>
</tr>
<tr>
<td>College of Engineering - Materials Science and Engineering</td>
</tr>
<tr>
<td>- Purchasing Investigation</td>
</tr>
<tr>
<td>College of Engineering - Materials Science and Engineering - Vendor Management</td>
</tr>
<tr>
<td>College of Engineering - Materials Science and Engineering - Faculty Member's</td>
</tr>
<tr>
<td>College of Sciences - General Information Technology Controls</td>
</tr>
<tr>
<td>Non-Salary Year End Transfer of Expenses</td>
</tr>
</tbody>
</table>

## Advisory Services

<table>
<thead>
<tr>
<th>Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Insurance Portability and Accountability Act (HIPAA)</td>
<td>- Office of Information Technology – Security and Compliance</td>
</tr>
<tr>
<td>Security Implementation Project</td>
<td>- Implementation of recommendations from HIPAA Security Assessment</td>
</tr>
<tr>
<td>Research Administration Systems Replacement – ERA (Enterprise</td>
<td>- Office of Research and Innovation and the Office of Finance and Administration</td>
</tr>
<tr>
<td>Research Administration)</td>
<td>- Replacement of multiple legacy systems used for enterprise research</td>
</tr>
<tr>
<td>Minor Consulting Services</td>
<td>- Requested consultative audit input on projects, new initiatives, or proper</td>
</tr>
<tr>
<td></td>
<td>handling of problems encountered</td>
</tr>
</tbody>
</table>


**Special Assignments**

<table>
<thead>
<tr>
<th>Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>University Information Technology (IT) Governance</td>
<td>• Long term, collaborative, independent engagement with IT stakeholders</td>
</tr>
<tr>
<td>Committees</td>
<td>• Proactively identify risk</td>
</tr>
<tr>
<td></td>
<td>• Advise decision-makers</td>
</tr>
<tr>
<td>College Information Technology Maturity Assessment</td>
<td>• College IT operations</td>
</tr>
<tr>
<td></td>
<td>• Assessment against the Control OBjectives for Information and Related</td>
</tr>
<tr>
<td></td>
<td>Technology (COBIT) maturity model</td>
</tr>
<tr>
<td></td>
<td>• Risk assessment for future IT general controls audits</td>
</tr>
</tbody>
</table>

**Continuous Risk Assessment**

The Audit Plan includes estimated time for each auditor’s participation in weekly strategic conversations with university leaders, weekly internal risk meetings, and ad hoc risk assessment activities.
The Board Of Governors Of The University Of North Carolina North Carolina State University At Raleigh; CP; Public Coll/Univ - Unlimited Student Fees

Primary Credit Analyst:
Ken W Rodgers, New York (1) 212-438-2087; ken.rogers@spglobal.com

Secondary Contact:
Mary Ellen E Wriedt, San Francisco (1) 415-371-5027; maryellen.wriedt@spglobal.com

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- Rationale
- Outlook
- Enterprise Profile
- Financial Profile
The Board Of Governors Of The University Of North Carolina
North Carolina State University At Raleigh; CP; Public Coll/Univ - Unlimited Student Fees

Credit Profile

The Brd of Governors of the Univ of North Carolina, North Carolina
North Carolina St Univ at Raleigh, North Carolina


Long Term Rating: AA/Stable, Current

Rationale

S&P Global Ratings' long-term rating and underlying rating (SPUR) on North Carolina State University at Raleigh's (NC State) existing revenue bonds is 'AA'. In addition, the short-term rating on NC State's outstanding commercial paper (CP) notes is 'A-1+'. Total debt outstanding at fiscal year-end June 30, 2018, is approximately $554 million including capitalized leases and $20 million of CP notes. The outlook, where applicable, is stable.

We assessed NC State's enterprise profile as very strong, characterized by healthy year-over-year growth in full-time equivalent (FTE) enrollment in each of the past two fall enrollment periods, with other favorable demand metrics and sound management and governance. In addition, NC State's economic fundamentals are excellent, operating in a state that has S&P Global Ratings highest rating. We assessed the university's financial profile as very strong, characterized by robust financial performance with recurring full accrual operating surpluses, good financial policies and a low to moderate debt burden with modest financial resources for the rating. Combined, we believe these credit factors lead to an indicative stand-alone credit profile of 'aa' and a long-term rating of 'AA'.

The short-term CP rating reflects the ample liquidity provided by UNC-Chapel Hill to pay the purchase price of CP notes unsuccessfully remarketed. UNC-Chapel Hill includes NC State's full $100 million CP authorization in its self-liquidity adequacy calculation in addition to its own $250 million authorization. The commercial paper program, issued for the benefit of both NC State and UNC-Chapel Hill and updated last on Nov. 16, 2017, has been in effect since 2002.

The ratings are supported by our view of NC State's:

- Role as North Carolina's land-grant university and one of two comprehensive research institutions in the 17-campus University of North Carolina (UNC) System;
- Recent firmer enrollment trend, coupled with highly competitive admissions at both the undergraduate and graduate levels;
- Very sound financial management practices, evidenced by solid operating performance and prudent controls over
investments and additional debt issuance; and

• Historically healthy funding for operations and capital from North Carolina.

In our opinion, partly offsetting credit factors include NC State's:

• Low financial resources for the rating category, with adjusted unrestricted net assets (UNA) of $355.6 million as of June 30, 2018, accounting for 20% of adjusted operating expenses and 64% of total debt; and

• Modest, for a major research university, but growing endowment of $1.29 billion, as of fiscal year-end 2018, most of which is restricted.

The university's outstanding general revenue bonds are payable from, and secured by, available funds of the university. The available funds pledge includes a broad range of university funds, which we consider equivalent to an unlimited student fee pledge. We understand NC State may issue up to $86 million in additional debt over the next two years to provide partial funding for new engineering and plant sciences buildings and renovations to its Carmichael Gym. In our view, assuming a commensurate growth in financial resources, NC State has debt capacity to absorb this issuance without adversely affecting its rating and outlook.

North Carolina State University at Raleigh was established in 1887 as a land-grant institution by the North Carolina General Assembly. Today, it is a comprehensive research university organized into 10 colleges spread across the 2,100-acre campus offering more than 300 undergraduate and graduate degree programs. The university offers programs in agriculture and life sciences, design, education, engineering, humanities and social sciences, management, natural resources, sciences, textiles, and veterinary medicine and is currently the largest four-year institution in the UNC System.

Outlook

The stable outlook reflects our expectation that, during the next two years, NC State's enrollment trend is favorable, financial performance on a full accrual basis is positive and financial resources grow commensurate with an anticipated modest additional debt issuance.

Downside scenario

We could consider a negative outlook if enrollment declined leading to weaker financial resources ratios relative to current levels, given modest additional debt issuance plans.

Upside scenario

A higher rating would require a significant increase in financial resource ratios and continuation of positive operating performance on a full accrual basis, coupled with state appropriation remaining firm.

Enterprise Profile
Industry risk
Industry risk addresses the higher education sector's overall cyclicality and competitive risk and growth by applying various stress scenarios and evaluating barriers to entry, levels and trends of profitability, substitution risk, and growth trends observed in the industry. We believe the higher education sector represents a low credit risk when compared with other industries and sectors.

Economic fundamentals
In our view, the university's geographic diversity is limited by the board of governors' policy requiring an 18% cap on incoming freshmen from out of state. As such, our assessment of NC State's economic fundamentals is anchored by the state of North Carolina's gross domestic product (GDP) per capita.

Market position and demand
NC State is the largest university in the UNC System with total headcount enrollment now exceeding 35,000 students. Over the past five fall enrollment periods, total headcount enrollment was positive in three out of five years compared with the prior periods' enrollment. For the past two fall enrollment periods, growth is healthy on both a total headcount and total FTE basis. Total headcount enrollment climbed 2% in fall 2017 and 3.2% in fall 2018. Total FTE enrollment climbed 3.6% and 3.1%, respectively, for the same years. Total headcount was 35,550 in fall 2018 and total FTE enrollment was 31,922. Graduate enrollment has become a somewhat larger portion of enrollment in recent years and accounted for 29% of total students for fall 2018, up from 27% in fall 2010. Management anticipates enrollment will be similar to fall 2018 for the incoming fall 2019 class.

First-year applications totaled 30,364 in fall 2018, a 14% increase from the previous year. In fall 2016, the university adopted the common app, when applications increased by nearly 25%. The university's selectivity ratio in fall 2018 was 46.8%, compared with 50.8% and 47.0% for fall 2017 and fall 2016, respectively. A solid 42.3% matriculated for fall 2018, a steep increase compared with fiscal 2017's 34.8% matriculation rate.

Management reports that out-of-state applicants have increased, although the Board of Governors policy dictates that out of state students represent less than 18% of the incoming freshmen class. Student quality, as measured by standardized test scores, is above average, with SAT scores of 1,319 for fall 2018. First-year retention rates are also excellent at approximately 94%, and graduation rates remain well above the public university national average.

For the 2018-2019 academic year, undergraduate tuition and fees for state residents is $9,101 and for out-of-state students is $28,444, which we consider modest compared with peers. Tuition is frozen for the third consecutive year for resident undergraduate students for fall 2019, although NC State has flexibility to raise fees where necessary.

Graduate admissions are also highly competitive. For fall 2018, the university received 15,267 applications for admission and selected a low 23.9% of those applicants. Fall 2018 was the first year that a residency requirement for first-year students was instituted, and occupancy for university owned housing is near full capacity according to management with the need to construct additional student housing in the future. NC State can house more than 9,000 students in 20 residence halls and five apartment complexes.

A major strategic initiative at the university is fundraising. The alumni participation rate remains low at 10% in fiscal 2018. The university completed a successful capital campaign in 2008, in which it raised $1.37 billion. We understand
its current initiative dubbed the “Think And Do the Extraordinary” capital campaign is doing very well. Launched in October 2016 this capital campaign's goal is $1.6 billion, with funds geared toward the university endowment, programs and professorships, and scholarships. We understand that the campaign is expected to conclude in December 2021; however, the university is close to raising the $1.6 billion goal now and is evaluating whether to raise the goal and continue the campaign or end the campaign early.

Management and governance
The NC State Board of Trustees comprises 13 members with eight elected by the UNC Board of Governors, four of whom are appointed by the governor, and one who is the president of the student government (ex-officio). The board's purpose is to advise on matters pertaining to the university and to serve as advisers to the chancellor. Certain responsibilities of the board involve approvals as delegated by the UNC Board of Governors.

We understand management and governance is stable and only one vacancy exists in the senior leadership team for the permanent Vice Chancellor for Finance and Administration and that position is expected to be filled shortly. We also understand, NC State is about to launch its next strategic plan development process as the existing 10-year plan ends in fiscal 2020. The strategic plan currently in effect focuses on realizing improved efficiencies and reallocates resources at both the academic and operational level enabling growth in high impact areas that facilitate meeting the state's need for the workforce of the future. In addition, we view positively management's conservative budgeting practices.

NC State has taken a number of actions to enhance its cyber-security. These actions include maintaining cyber-insurance, staff training and other testing and security measures that the university prefers to keep confidential. We view these actions positively and indicative of utilizing best practices to minimize this type of risk. NC State also has a robust enterprise risk management program.

We also understand NC State is currently reviewing next steps and determining the appropriate response to a recent NCAA notice of allegations in connection with alleged rules violations following the federal government's inquiry into men's college basketball.

Research
NC State's campus includes a central campus; the Biomedical Centennial Campus; and Centennial Campus, a 1,334-acre research and technology-transfer park that includes corporate and government research, as well as development centers and business incubators. The university, along with the UNC-Chapel Hill and Duke University, constitute the backbone of the Research Triangle. Research Triangle is a world-leading research development park, which we believe provides long-term stability to the university's role.

In our opinion, the university conducts a high level of research for an institution without a medical school. Grants and contracts account for 17% of revenues for fiscal 2018, the largest contributor of which is the National Science Foundation. We understand research expenditures in fiscal 2018 exceed $500 million. The university's indirect cost recovery rate is 52%.
Financial Profile

Financial management policies
The university has formal policies for endowment, investments, and debt. It operates according to a 10-year strategic plan and has an unwritten reserve liquidity policy. The university meets standard annual disclosure requirements. The financial policies assessment reflects our opinion that, while there may be some areas of risk, the organization's overall financial policies are not likely to weaken its future ability to pay debt service. Our analysis of financial policies includes a review of the organization's financial reporting and disclosure, investment allocation and liquidity, debt profile, contingent liabilities, and legal structure and a comparison of these policies with comparable providers.

Financial performance
In our view, a key credit strength of NC State is its financial operating performance. Operations have historically been robust with positive operations on a full-accrual basis in each of the past five audited fiscal years through June 30, 2018. In fiscal 2018, NC State posted a 3.2% adjusted net operating margin, which is comparable with prior years.

Total assets for fiscal 2018 were $3.4 billion. NC State posted positive financial operations in fiscal 2018, despite the aforementioned tuition freeze in effect for resident undergraduate students, by realizing a 1.8% increase in state appropriation, trimming expenses, and realizing a 7.5% increase in net tuition revenue (the latter due, in large part, to the 3.6% increase in total FTE enrollment in fall 2017).

Adjusted net income before capital appropriations and additions to endowment totaled $51.3 million in fiscal 2018. Management's expectations are for another healthy surplus in fiscal 2019. Management anticipates fiscal 2020 performance will also result in a surplus although there is some uncertainty as North Carolina hasn't finalized its fiscal 2020 budget and NC State, along with other public colleges and universities, is operating under a temporary continuation budget.

State appropriations continue to grow and were $515.4 million in fiscal 2018 and for fiscal 2019 estimated at $522.6 million. Capital appropriations have historically been modest and were $18.9 million in fiscal 2018 and estimated at $49.6 million for fiscal 2019.

Available resources
The university's financial resources are adequate to support the rating but somewhat low for the rating category in our view. The principle reason financial resources growth is somewhat lackluster is the impact of the undergraduate resident tuition freeze, investments made in faculty and staff to attract the most academically qualified class in fall 2018 and funds the university has expended to maintain its campus with an impressive 10.9 year average age of plant. Adjusted UNA totaled $355.6 million as of June 30, 2018, equal to just 20.4% of adjusted operating expenses and 64.2% of total debt. This latter figure, on a pro forma basis, would decline to 55.6% if NC State proceeds with plans to issue additional debt of up to $86 million over the next two years.

Total market value for the NC State associated entities and the university endowment fund was $1.29 billion as of fiscal year-end 2018. Management attributes the increase in 2018 to successful fundraising associated with its capital campaign as well as solid investment returns of 11.4% for the year. The majority of the university's endowments are
pooled into the North Carolina State Investment Fund (NCSIF). About 90% of these funds are managed by the UNC Management Co. Inc. Annual distributions are about 5% of the average market value of the endowment during the previous 20 quarters.

NC State has sufficient liquidity as part of its long-term investment portfolio, in our view. Operating funds are generally invested in the state treasurer's investment fund, which provides same-day funds, and to a lesser degree, in NC State investment Fund's Intermediate Term Fund.

Debt and contingent liabilities
As of fiscal year-end 2018, the university has approximately $554.0 million in total debt outstanding. Of the $554.0 million, $488 million are revenue bonds secured by a pledge of available funds. We understand NC State intends to issue up to $86 million in new debt over the next two years for various capital projects. Incorporating this proposed additional debt total pro forma debt is $640.0 million. We view the self-supporting nature of the general revenue bonds and internal policy of 1.2x debt service coverage (per project) as positive and believe they help mitigate some of the risk associated with the large overall debt level. All of the university's debt is fixed rate.

In 2010, the university entered into a direct-placement loan with BB&T Bank, with $15.7 million outstanding at fiscal year-end 2018. Also, the university has a direct-placement obligation with Bank of America outstanding at fiscal year-end 2018 in the amount of $49.5 million. In addition, the university entered into a $50 million direct-placement loan with PNC in 2017. We have reviewed the terms of the loans and view them as on parity with general revenue bonds, which means there are no additional rate covenants, immediate acceleration, or cross-defaults as is stipulated in the general trust indenture.

NC State participates in North Carolina's 'Teachers' and State Employees' Retirement System (TSERS)-a cost sharing, multiple-employer, defined-benefit pension plan. TSERS is the largest of several defined-benefit pension plans administered by North Carolina. We understand the university contributed $35.7 million to the plan for the year ended June 30, 2018, recognized pension expense of $49.8 million and reported a liability of $176.6 million for its proportionate share of the collective net pension liability.

We understand the state does not separately break out the funded ratio for TSERS alone, however, the funded ratio for all plans it administers is strong at 90.7%. In addition, faculty and staff may alternatively join The Optional Retirement Plan (ORP)-a defined contribution pension plan. The university had a total payroll of $796.0 million in fiscal 2018 of which $308.9 million was covered under ORP. NC State made contributions to ORP in fiscal 2018 of $21.1 million.

We also understand NC State participates in North Carolina's two postemployment benefit plans, the Retiree Health Benefit Fund (RHBF) and the Disability Income Plan of North Carolina (DIPNC). The university's contributions to the RHBF were $38.8 million for the year ended June 30, 2018, and to the DIPNC were $896,700. As of June 30, 2018, the university reported a net other postemployment benefit (OPEB) liability of $1.2 billion for RHBF and a net OPEB asset of $2.4 million for its proportionate share of the collective net OPEB asset for DIPNC.

In our view NC State's pension and OPEB funding requirements are well within its means to handle and do not present any incremental credit risk.
## North Carolina State University At Raleigh, North Carolina Enterprise And Financial Statistics

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<tbody>
<tr>
<td>Headcount</td>
<td>35,550</td>
<td>34,432</td>
<td>33,755</td>
<td>34,015</td>
<td>33,989</td>
<td>MNR</td>
<td>35,846</td>
</tr>
<tr>
<td>Full-time equivalent</td>
<td>31,922</td>
<td>30,954</td>
<td>29,864</td>
<td>29,874</td>
<td>29,937</td>
<td></td>
<td>35,846</td>
</tr>
<tr>
<td>Freshman acceptance rate (%)</td>
<td>46.8</td>
<td>50.8</td>
<td>47.0</td>
<td>49.8</td>
<td>51.4</td>
<td>67.8</td>
<td></td>
</tr>
<tr>
<td>Freshman matriculation rate (%)</td>
<td>42.3</td>
<td>34.8</td>
<td>34.4</td>
<td>40.3</td>
<td>41.9</td>
<td>MNR</td>
<td></td>
</tr>
<tr>
<td>Undergraduates as a % of total enrollment (%)</td>
<td>70.9</td>
<td>70.1</td>
<td>70.6</td>
<td>66.0</td>
<td>67.4</td>
<td>78.6</td>
<td></td>
</tr>
<tr>
<td>Freshman retention (%)</td>
<td>94.0</td>
<td>94.0</td>
<td>93.8</td>
<td>93.7</td>
<td>93.0</td>
<td>86.0</td>
<td></td>
</tr>
<tr>
<td>Graduation rates (six years) (%)</td>
<td>81.0</td>
<td>79.0</td>
<td>76.0</td>
<td>76.0</td>
<td>N.A.</td>
<td>MNR</td>
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## Income statement

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<tr>
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<tbody>
<tr>
<td>Adjusted operating revenue ($000s)</td>
<td>N.A.</td>
<td>1,711,697</td>
<td>1,650,273</td>
<td>1,559,235</td>
<td>1,508,039</td>
<td>MNR</td>
<td></td>
</tr>
<tr>
<td>Adjusted operating expense ($000s)</td>
<td>N.A.</td>
<td>1,656,965</td>
<td>1,604,049</td>
<td>1,530,726</td>
<td>1,452,024</td>
<td>MNR</td>
<td></td>
</tr>
<tr>
<td>Net adjusted operating income ($000s)</td>
<td>N.A.</td>
<td>54,732</td>
<td>46,224</td>
<td>28,509</td>
<td>56,015</td>
<td>MNR</td>
<td></td>
</tr>
<tr>
<td>Net adjusted operating margin (%)</td>
<td>N.A.</td>
<td>3.30</td>
<td>2.88</td>
<td>1.86</td>
<td>3.86</td>
<td>1.50</td>
<td></td>
</tr>
<tr>
<td>Estimated operating gain/loss before depreciation ($000s)</td>
<td>N.A.</td>
<td>153,653</td>
<td>141,867</td>
<td>117,230</td>
<td>138,094</td>
<td>MNR</td>
<td></td>
</tr>
<tr>
<td>Change in unrestricted net assets (UNA; $000s)</td>
<td>N.A.</td>
<td>(1,702,283)</td>
<td>(3,984)</td>
<td>23,327</td>
<td>(39,135)</td>
<td>MNR</td>
<td></td>
</tr>
<tr>
<td>State operating appropriations ($000s)</td>
<td>N.A.</td>
<td>515,353</td>
<td>506,419</td>
<td>502,534</td>
<td>481,548</td>
<td>MNR</td>
<td></td>
</tr>
<tr>
<td>State appropriations to revenue (%)</td>
<td>N.A.</td>
<td>30.1</td>
<td>30.7</td>
<td>32.2</td>
<td>31.9</td>
<td>19.2</td>
<td></td>
</tr>
<tr>
<td>Student dependence (%)</td>
<td>N.A.</td>
<td>25.2</td>
<td>24.5</td>
<td>24.6</td>
<td>23.9</td>
<td>39.7</td>
<td></td>
</tr>
<tr>
<td>Health care operations dependence (%)</td>
<td>N.A.</td>
<td>N.A.</td>
<td>N.A.</td>
<td>N.A.</td>
<td>N.A.</td>
<td>MNR</td>
<td></td>
</tr>
<tr>
<td>Research dependence (%)</td>
<td>N.A.</td>
<td>17.2</td>
<td>17.5</td>
<td>17.9</td>
<td>17.8</td>
<td>MNR</td>
<td></td>
</tr>
<tr>
<td>Endowment and investment income dependence (%)</td>
<td>N.A.</td>
<td>2.4</td>
<td>2.1</td>
<td>0.6</td>
<td>1.3</td>
<td>1.4</td>
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## Debt

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<tbody>
<tr>
<td>Outstanding debt ($000s)</td>
<td>N.A.</td>
<td>553,988</td>
<td>573,203</td>
<td>574,549</td>
<td>561,961</td>
<td>828,692</td>
<td></td>
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<tr>
<td>Proposed debt ($000s)</td>
<td>N.A.</td>
<td>86,000</td>
<td>N.A.</td>
<td>N.A.</td>
<td>N.A.</td>
<td>MNR</td>
<td></td>
</tr>
<tr>
<td>Total pro forma debt ($000s)***</td>
<td>N.A.</td>
<td>639,988</td>
<td>N.A.</td>
<td>N.A.</td>
<td>N.A.</td>
<td>MNR</td>
<td></td>
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<tr>
<td>Current debt service burden (%)</td>
<td>N.A.</td>
<td>5.67</td>
<td>2.36</td>
<td>1.93</td>
<td>2.03</td>
<td>MNR</td>
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<tr>
<td>Current MADS burden (%)</td>
<td>N.A.</td>
<td>2.63</td>
<td>2.79</td>
<td>2.70</td>
<td>2.84</td>
<td>3.50</td>
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## Financial resource ratios

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<tr>
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</thead>
<tbody>
<tr>
<td>Endowment market value ($000s)</td>
<td>N.A.</td>
<td>1,293,700</td>
<td>1,122,900</td>
<td>998,600</td>
<td>984,000</td>
<td>990,083</td>
<td></td>
</tr>
<tr>
<td>Related foundation market value ($000s)</td>
<td>N.A.</td>
<td>688,435</td>
<td>625,523</td>
<td>569,822</td>
<td>576,686</td>
<td>688,435</td>
<td></td>
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</table>
## North Carolina State University At Raleigh, North Carolina

Enterprise And Financial Statistics (cont.)

<table>
<thead>
<tr>
<th></th>
<th>2019</th>
<th>2018</th>
<th>2017</th>
<th>2016</th>
<th>2015</th>
<th>2018</th>
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<tbody>
<tr>
<td>Cash and investments ($000s)</td>
<td>N.A.</td>
<td>691,428</td>
<td>611,322</td>
<td>594,841</td>
<td>446,080</td>
<td>MNR</td>
</tr>
<tr>
<td>UNA ($000s)</td>
<td>N.A.</td>
<td>(1,465,834)</td>
<td>236,449</td>
<td>240,433</td>
<td>217,106</td>
<td>MNR</td>
</tr>
<tr>
<td>Adjusted UNA ($000s)</td>
<td>N.A.</td>
<td>337,993</td>
<td>351,171</td>
<td>346,854</td>
<td>348,529</td>
<td>MNR</td>
</tr>
<tr>
<td>Cash and investments to operations (%)</td>
<td>N.A.</td>
<td>41.7</td>
<td>38.1</td>
<td>38.9</td>
<td>30.7</td>
<td>54.0</td>
</tr>
<tr>
<td>Cash and investments to debt (%)</td>
<td>N.A.</td>
<td>124.8</td>
<td>106.7</td>
<td>103.5</td>
<td>79.4</td>
<td>168.3</td>
</tr>
<tr>
<td>Cash and investments to pro forma debt (%)</td>
<td>N.A.</td>
<td>108.0</td>
<td>N.A.</td>
<td>N.A.</td>
<td>N.A.</td>
<td>MNR</td>
</tr>
<tr>
<td>Adjusted UNA to operations (%)</td>
<td>N.A.</td>
<td>20.4</td>
<td>21.9</td>
<td>22.7</td>
<td>24.0</td>
<td>35.3</td>
</tr>
<tr>
<td>Adjusted UNA plus debt service reserve to debt (%)</td>
<td>N.A.</td>
<td>64.2</td>
<td>64.3</td>
<td>63.0</td>
<td>65.4</td>
<td>97.8</td>
</tr>
<tr>
<td>Adjusted UNA plus debt service reserve to pro forma debt (%)</td>
<td>N.A.</td>
<td>55.6</td>
<td>N.A.</td>
<td>N.A.</td>
<td>N.A.</td>
<td>MNR</td>
</tr>
<tr>
<td>Average age of plant (years)</td>
<td>N.A.</td>
<td>10.9</td>
<td>10.5</td>
<td>10.3</td>
<td>10.3</td>
<td>13.0</td>
</tr>
</tbody>
</table>


### Ratings Detail (As Of August 7, 2019)

**North Carolina St Univ at Raleigh ICR**

*Long Term Rating* | AA/Stable | Current

**The Brd of Governors of the Univ of North Carolina, North Carolina**

North Carolina St Univ at Raleigh, North Carolina

*Long Term Rating* | AA/Stable | Current

**Univ of North Carolina Brd of Governors (North Carolina St Univ at Raleigh) (CP)**

*Short Term Rating* | A-1+ | Current
MARKET COMMENTARY

Following a disappointing and volatile end to 2018, global markets bounced back nicely in the first quarter of calendar year 2019. Returns were strong across asset classes with equities, real estate, and corporate bonds producing the strongest returns. Reversing its hawkish communications of 2018, the Federal Reserve and other central banks, stated their intentions to be more data dependent and accommodative with future rate hikes, thus leading to a strong rally in risk assets. Domestically, the US Treasury yield curve inverted, which has historically been a precursor to a recession. As a recession indicator, however, yield curve inversions have produced numerous false positives and the lag between inversion and recession has varied widely. Other economic indicators (unemployment, inflation, GDP) are still strong and a recession does not appear to be on the near-term horizon.

Domestic equities, as measured by the S&P 500 Index, were up significantly during the quarter, gaining 13.6%. Mid- and small-cap stocks, as measured by the Russell Mid Cap Index and the Russell 2000 Index, posted even stronger returns, up 16.5% and 14.6%, respectively. For the one-year period ended March 31, 2019, large-, mid-, and small-cap stocks are back in the positive, returning 9.5%, 6.5%, and 2.0%, respectively.

International equities, as measured by the MSCI EAFE Index returned 10.1% for the quarter. Over the last year, the index is down -3.2%. Uncertainty around an effective Brexit resolution, U.S. trade policies and slowing growth concerns continue to cast a shadow on international markets.

Emerging markets, as measured by the MSCI Emerging Markets Index, were also positive, gaining 10% for the quarter. Within emerging markets, China provided a significant boost following renewed optimism over a trade agreement with the US and ongoing government support for its domestic economy.

The first quarter of 2019 also saw a drop in 10-year Treasury yields following dovish communications by the Fed. Long-dated corporate debt, as measured by the Bloomberg Barclays US Long Corporate Index, produced some of the strongest returns within fixed income, gaining nearly 8% during the period. The more broadly diversified Bloomberg Barclays US Bond Index produced a return of 2.9%, bringing its one-year gain to 4.5%.

Looking ahead, central bank policy is once again primed to be the main driver of asset returns. The Federal Reserve appears to have flexibility to continue on its dovish path as low unemployment has not led to significant pressure on wages or inflation to date. Internationally, trade policy and Brexit introduce significant tail-risks, with the outcomes of each potentially having major global implications. Within fixed income, market participants continue to monitor the inversion of the U.S. Treasury yield curve and the validity of its predictive prowess. Overall, at least domestically, the path of least resistance, still appears to be up in the near-term. Risks including corporate debt and decreasing consumer confidence will continue to be monitored, but for now it appears that risk is back on.
**INVESTMENT STRATEGY**

The Fund is managed as a broadly diversified portfolio with exposure to seven primary asset classes and many sub-strategies within each asset class. The Fund seeks to diversify exposure to the sub-strategies through the use of multiple investment managers that utilize a variety of investment approaches. The purpose of diversification is to provide reasonable assurance that no single security, class of securities, or investment manager has a disproportionate impact on the Fund's aggregate results. At times, the Fund invests in passive strategies. In working toward the Fund's investment strategy, through UNCMC, the Fund invests in a number of niche managers that can employ different types of hedging strategies such as short-selling and derivative investing to help reduce the volatility of the Fund. The focus on controlling volatility preserves capital and benefits Fund participants through the power of compounding.

**ASSET ALLOCATION**

![Asset Allocation Chart]

- **Long Biased Equity**: 33.1%
- **Long/Short Equity**: 12.9%
- **Diversifying**: 8.7%
- **Fixed Income**: 8.9%
- **Cash**: 1.7%
- **Private Equity**: 21.1%
- **Real Estate**: 8.9%
- **Private Credit**: 8.7%
- **Energy & Natural Resources**: 12.9%

**UNC MANAGEMENT CO.**

The UNCMC was established on January 1, 2003 as an exempt 501 (c)(3) organization. It is a professionally-staffed asset management company created to provide investment services to the University of North Carolina at Chapel Hill and its affiliated entities, to the constituent institutions of the UNC system and system affiliated foundations, associations, trusts, and endowments. With over 40 employees, UNCMC has two teams, Investment Management and Operations. The Investment Management team manages all public and private investments of the UNCIF. Their responsibilities include evaluating and monitoring investment managers, recommending changes to investment objectives and asset allocation, monitoring risk, and implementing investment decisions approved by the UNCIF’s Executive Committee. The Operations Team performs all administrative, legal, compliance, accounting, and performance reporting duties.

**HISTORY OF THE FUND**

The NC State Investment Fund, Inc., (Fund) was established in April 1999 to combine NC State University's and its affiliated entities' endowments in an external pooled investment vehicle. The goal of the investment program for the Fund is to provide a real total return from assets invested that will preserve the purchasing power of Fund capital, while generating an income stream to support the spending needs of the University. Effective July 2008, the Fund partnered with UNC Management Company (UNCMC) to invest in the UNC Investment Fund (UNCIF), with the remaining investments committed to a Liquid Policy Portfolio (LPP) of Exchange Traded Funds (ETF's) and to seven private equity managers which includes an allocation for cash to fund capital calls. The transition of assets to UNCMC was completed December 2009.

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This report is based on information available at the time of distribution. The information comprising this report has not been audited and is subject to change.

Third Quarter Fiscal Year 2019
NC State Intermediate Term Fund

NC State University, Campus Box 7207, Raleigh, NC 27695-7207

Inception Date: July 3, 2014

FUND HISTORY AND PHILOSOPHY

As a pooled fund for the collective investment of operating funds, the NC State Intermediate Term Fund (ITF) consists of Participants’ excess cash balances, which are defined as funds not needed for normal operating purposes. Generally, the ITF will not include operating funds needed within the next year, endowed funds or those funds that are specifically excluded by law or contractual agreement.

The decision to invest funds takes into account various factors including duration, credit, concentration, and manager risk, along with total return, suitability, and the experiences, quality and capability of external managers.

The primary investment objectives of the ITF are: 1) Preservation and safety of principal; 2) Liquidity; and 3) Maximization of returns within acceptable levels of risk. Because of current concerns about potential changes in monetary policy and rising interest rates, duration is limited. The investment policy calls for an average weighted maturity between one and five years, with an overall credit rating in general of A+/A as rated by a nationally-recognized rating agency. However, for any mutual funds selected by the ITF, their respective approved investment policy guidelines supersede those of the ITF.

The ITF was established on July 3, 2014 with an initial investment of $122 million. Additional investments were made during FY 2015 and FY 2017, bringing the total invested to $193.83 million. The ITF can be compared with the State Treasurer’s Short-Term Investment Fund (STIF) on both a total return and on an SEC yield basis. In order to provide a buffer for changes in the NAV of the different investments, some of the excess earnings are being used to create a loss reserve. FMV fluctuates on a day-to-day basis.

BlackRock’s SIO was liquidated from the fund on June 30, 2016. Proceeds were invested in Vanguard’s Short Term Fund and DoubleLine’s Total Return Fund on July 1, 2016. Additionally, a small position with PIMCO Income was initiated on November 2, 2016. The ITF’s position in JP Morgan was liquidated on September 27, 2017 and PIMCO Low Duration was liquidated on October 2, 2017. The proceeds from these liquidations were reinvested into Vanguard’s Short Term Fund and PIMCO Income, bringing the total cost basis to $190.4 million.

PERFORMANCE

| Market Value | $186,395,686 |
| Performance | QTD | FYTD | 1 Year | 3 Year |
| ITF Fund | 2.4% | 3.8% | 3.9% | 2.3% |
| Barclays 1-3 yr Treasury | 1.0% | 2.5% | 2.7% | 1.0% |
| Barclays Universal 1-5 yr | 2.0% | 3.6% | 3.7% | 2.0% |
| DoubleLine | 2.0% | 4.0% | 4.3% |
| PIMCO Income | 3.0% | 4.4% | 3.9% |
| Vanguard Short Term | 2.2% | 3.5% | 3.7% | 2.1% |

STATISTICS

| Volatility | Fund | Index (1) |
| Sharpe Ratio | -0.5 | -0.4 |
| SEC Yield | 3.4% | 3.0% |
| Effective Duration | 2.5 | 2.6 |
| FYTD Net Interest & Dividends** | $5,004,752 | N/A |
| Net Interest & Dividends Since Inception** | $22,598,060 | N/A |

**Net of Fund expenses

Note 1: The iShares Core 1-5 Year Bond ETF is used as a proxy for the benchmark for Statistics information.

MANAGERS

Vanguard’s Short Term Fund has a low tracking error and is a low cost portfolio option consisting primarily of investment grade corporates.

PIMCO’s Income Fund is a portfolio of a broad range of intermediate-duration bonds that is actively managed to maximize current income while maintaining a relatively low risk profile.

DoubleLine’s Total Return Fund seeks to maximize total return by exploiting inefficiencies within the subsectors of the mortgage market while maintaining active risk management constraints.

SECTOR ALLOCATION

MANAGER ALLOCATION

This report is based on information available at the time of distribution. The information comprising this report has not been audited and is subject to change.

Third Quarter Fiscal Year 2019
AGENDA

CALL TO ORDER

Jimmy Clark, Chair, Buildings and Property Committee

- Roll Call
- Reading of the State Government Ethics Act

1. 2019-2020 COMMITTEE PLAN OF WORK

Doug Morton, Associate Vice Chancellor, Facilities

- Review of 2019-2020 Committee Plan of Work

2. COMMITTEE RESPONSIBILITIES AND PROCEDURES

Doug Morton, Associate Vice Chancellor, Facilities

- Review of Committee Responsibilities

3. MINUTES

Jimmy Clark, Chair, Buildings and Property Committee

- Approval of April 18, 2019 meeting minutes

4. PROPERTY MATTERS

Lisa Van Roekel, Leasing Specialist, Real Estate & Development.

✓ Disposition by Lease to Tread Happy (or affiliated entity) previously leased retail space at 2010 Hillsborough Street. This property disposition by space lease will provide income for the maintenance and upkeep of the property

✓ Acquisition by Lease on behalf of the Small Business and Technology Development Center (“SBTDC”), whose existing space lease expires on September 30, 2019, requests a lease for strategic office space, preferably in its current or comparable location, to house its regional offices in Asheville,

✓ Requires full board approval

Materials will be distributed to committee members at the meeting
NC. SBTDC requires space to meet confidentially with business owners in order to counsel and provide entrepreneurs with the tools they need to build and grow successful businesses which positively impacts NC’s economy.

Harlan Stafford, Interim Associate Vice Chancellor, Real Estate & Development

 ✓ Disposition by easement. The City of Raleigh has requested an Amendment of an existing utility easement to allow for the continuing development of Centennial Campus. A portion of the existing easement along Main Campus Drive will be realigned in length and route to allow the City of Raleigh to operate within existing infrastructure installed by the university. The proposed new easement area will be +/- 1,400 sf ~ 0.321 ac.

 ✓ Disposition by easement. Duke Energy Progress has requested the Conveyance of a utility easement to install a power line on and for the benefit of the NCSU Butner Beef Cattle Field Lab (BBCFL) property. The power line will run from an existing service line on the BBCFL property to a well located on adjacent property leased by BBCFL. The proposed new easement area will be +/- 5,966 sf ~ 2.74 ac.

 ✓ Disposition by easement. AT&T has requested the conveyance of an easement for installation of underground fiber optic cable from an existing manhole on Method Rd to a communication room located at 3121 Ligon Street to provide a redundant connection of the 911 circuit between NC State Campus Police and the Wake County 911 Center. The proposed new easement area will be +/- 120 sf ~ 0.0028 ac.

 ✓ Disposition by Demolition. The College of Agriculture and Life Sciences has requested the demolition of three structures located on West Campus on Ligon Street, due to poor condition of the structures. The structures are as follows the Small Animal Research Building, the Modular Dinoflagellate Facility, and the Aquatic Research Fish Lab.

 ✓ Disposition by Demolition. The Real Estate Department has requested the demolition of the Centennial Campus Information Booth located on Centennial Campus at Varsity Drive due to poor condition of the structure.

 ✓ Requires full board approval

¹ Materials will be distributed to committee members at the meeting
BUILDINGS AND PROPERTY COMMITTEE
NORTH CAROLINA STATE UNIVERSITY
September 12, 2019

✓ Acquisition by Purchase of +/- 40.99 ac. to be added to the existing Central Crops Research Station in Wake Co. The College of Agriculture and Life Sciences currently leases the property for the study of weed management.

✓ Acquisition by Purchase of +/- 12 ac. to be added to the existing Lake Wheeler Field Lab in Wake Co. This property is centrally located within Lake Wheeler Field Lab and will be a strategic acquisition for the university.

5. PROPERTY MATTERS (Received after Full Board Mailing) TAB 5

6. DESIGNER SELECTIONS TAB 6

Doug Morton, Associate Vice Chancellor, Facilities

• Interior Renovations Erdahl-Cloyd 5.6.A.1
• Jordan Hall Renovation 5.6.A.2
• Wrestling Addition & Renovation 5.6.A.3
• Dairy Facility-CVM 5.6.A.4
• Approval of Designer Selections $1 million or Less 5.6.A.5

7. ACCEPTANCE OF COMPLETED BUILDINGS AND PROJECTS TAB 7

Doug Morton, Associate Vice Chancellor, Facilities

• The University and Office of State Construction have accepted the attached list of completed buildings and projects with dollar values greater than $2,000,000. The University has accepted the attached list of completed buildings and projects with dollar values less than $2,000,000. All are recommended to the Buildings and Property Committee for formal acceptance. This listing represents buildings and projects received since the February 21, 2019 meeting.

8. NON-APPROPRIATED CAPITAL IMPROVEMENT PROJECTS TAB 8

Doug Morton, Associate Vice Chancellor, Facilities

• The UNC Board of Governor’s delegated authority to approve and administer non-appropriated capital improvement projects funded entirely with non-General Fund money that are projected to cost less than $750,000.
• Approval of Non-Appropriated Capital Improvement Projects less than $750,000.

✓ Requires full board approval

† Materials will be distributed to committee members at the meeting
9. SITE AND PLAN REVIEW / APPROVAL

Lisa Johnson, University Architect

Site/Plan Review Approval
- Approval of Plans and Specifications of Formal Projects less than $2 million 5.9.A.1

10. INFORMATIONAL REPORTS

Lisa Johnson, University Architect and Harlan Stafford, Interim Associate Vice Chancellor, Real Estate & Development

- NCDOT I-440 Widening Project Update ¹(5.10.A.1)
  Doug Morton, Associate Vice Chancellor, Facilities
- Capital Projects Update/Overview of the Campus Infrastructure 5.10.A.2
  Lisa Johnson, University Architect
- Status of Projects in Planning 5.10.A.3

ADJOURN

✓ Requires full board approval
¹ Materials will be distributed to committee members at the meeting
September
- Accept Completed Buildings and Projects (NC State POL 01.05.01, Appendix 1, II, a.v.) (Acceptance)
- Acquisition and Disposition of Interests in Real Property (UNC POL Ch. 100.1, Appendix 1 (VI)), (NC State POL 01.05.01, App 1, I II, c.i.ii) (Consider and approve property matters in a timely fashion to avoid adverse impact to the business of the University.)
- Architect Selection (NC State POL 01.05.01, Appendix 1, II, i.) and Construction Managers at Risk Selection (NC State POL 01.05.01, Appendix 1, II, ii.) (Participate in designer, developer, and CMR selection interviews and approve selections in a timely manner to avoid impacts to project schedules.)
- Building Site, Plan and Specification Approval (NC State POL 01.05.01, App 1, III.iv.v) (Review of project design plans for responsiveness to the vision of the physical master plan. Review and approve design projects in a timely manner to avoid impact to project design and construction schedule.)
- Capital Projects Update (UNC POL Ch. 100.1, App.1 (VI)) (Receive periodic updates and comment as warranted. Approval of non-appropriated capital improvement projects.)
- Projects in Planning Status (Receive periodic updates and comment as warranted.)
- Review Committee Responsibilities (Annually)

November
- Accept Completed Buildings and Projects (NC State POL 01.05.01, App 1.II.vi) (Acceptance)
- Acquisition and Disposition of Interests in Real Property (UNC Pol. Ch. 100.1, App.1 (VI)), (NC State POL 01.05.01, App 1.II.vi) (Consider and approve property matters in a timely fashion to avoid adverse impact to the business of the University.)
- Architect Selection (NC State POL 01.05.01, App 1, II.ii) and Construction Managers at Risk Selection (NC State POL 01.05.01, App 1, II.iii) (Participate in designer, developer, and CMR selection interviews and approve selections in a timely manner to avoid impacts to project schedules.)
- Building Site, Plan and Specification Approval (NC State POL 01.05.01, App 1, III.iv.v) (Review of project design plans for responsiveness to the vision of the physical master plan. Review and approve design projects in a timely manner to avoid impact to project design and construction schedule.)
- Capital Projects (UNC Pol., Ch. 100.1, App.1 (VI) and Centennial Campus Update) (Receive periodic updates and comment as warranted. Approval of non-appropriated capital improvement projects.)
- Projects in Planning Status (Receive periodic updates and comment as warranted.)

February
- Accept Completed Buildings and Projects (NC State POL 01.05.01, App 1.II.vi) (Acceptance)
- Acquisition and Disposition of Interests in Real Property (UNC Pol. Ch. 100.1, App.1 (VI)), (NC State POL 01.05.01, App 1.II.vi) (Consider and approve property matters in a timely fashion to avoid adverse impact to the business of the University.)

Desired outcomes and measures of success are highlighted
Desired outcomes and measures of success are highlighted

- Architect Selection (NC State POL 01.05.01, App 1, II.ii) and Construction Managers at Risk Selection (NC State POL 01.05.01, App 1, II.iii) (Participate in designer, developer, and CMR selection interviews and approve selections in a timely manner to avoid impacts to project schedules.)
- Building Site, Plan and Specification Approval (NC State POL 01.05.01, App 1, III.iv.v) (Review of project design plans for responsiveness to the vision of the physical master plan. Review and approve design projects in a timely manner to avoid impact to project design and construction schedule.)
- Capital Projects Update (UNC Pol., Ch. 100.1, App.1 (VI)) (Receive periodic updates and comment as warranted. Approval of non-appropriated capital improvement projects.)
- Projects in Planning Status (Receive periodic updates and comment as warranted.)

April

- Accept Completed Buildings and Projects (NC State POL 01.05.01, App 1.II.vi) (Acceptance)
- Acquisition and Disposition of Interests in Real Property (UNC Pol., Ch. 100.1, App.1 (VI)), (NC State POL 01.05.01, App 1.II.vi) (Consider and approve property matters in a timely fashion to avoid adverse impact to the business of the University.)
- Architect Selection (NC State POL 01.05.01, App 1, II.ii) and Construction Managers at Risk Selection (NC State POL 01.05.01, App 1, II.iii) (Participate in designer, developer and CMR selection interviews and approve selections in a timely manner to avoid impacts to project schedules.)
- Building Site, Plan and Specification Approval (NC State POL 01.05.01, App 1, III.iv.v) (Review of project design plans for responsiveness to the vision of the physical master plan. Review and approve design projects in a timely manner to avoid impact to project design and construction schedule.)
- Capital Projects Update (UNC Pol., Ch. 100.1, App.1 (VI) and Centennial Campus Update) (Receive periodic updates and comment as warranted. Approval of non-appropriated capital improvement projects.)
- Parking and Transportation Ordinances (NC State POL 07.60.01), (NCGS §116-44.4, §20-137.7) (Approval)
- Physical Master Plan Update (UNC Pol. Ch. 100.1, App 1 (VI)), (NC State POL. 01.05.01, App 1, II.a.i) (Receive annual update and comment as warranted.)
- Projects in Planning Status (Receive periodic updates and comment as warranted.)
NORTH CAROLINA STATE UNIVERSITY
BOARD OF TRUSTEES
BUILDINGS AND PROPERTY COMMITTEE

REVIEW OF COMMITTEE RESPONSIBILITIES

The By-Laws Subject to policies of the Board of Governors and all legal requirements relative to the construction of state-owned buildings, the Buildings and Property Committee is responsible for the following matters concerning campus capital construction projects, which have been approved by the Board of Governors and authorized by the State of North Carolina.

MASTER PLAN
Required
Annual review by Buildings and Property Committee

DESIGNER SELECTION
Required
All major new buildings, major additions, and comprehensive renovation projects (cost greater than $1,000,000) require one current or former Trustee on the selection committee. For large complex projects that involve several campus units the Secretary to the Trustees’ Buildings and Property Committee in consultation with the Chair of the Trustees’ Buildings and Property Committee will decide if additional user and Trustee representation is warranted. Bi-annual approval of Open-Ended Service Agreement Design selections. Selections are for a one-year term with an option for a one-year extension.

Procedure
• Committee Chair approval of short list.
• Selection committee interview with trustee.
• Buildings and Property Committee selection or rejection.
• For open-ended service agreement design selections, interview may be waived and there will be no rank ordering.
• For major utility, repair, landscaping and road improvement projects and for major building mechanical and electrical projects (over $500,000), trustee representation on the interview committee is not required.

CONSTRUCTION MANAGER-AT-RISK SELECTION
Required
All projects require the same Selection Committee, who interviewed and evaluated the designers for a capital project to also serve as a Selection Committee member for the Construction Manager-at-Risk for the project. For large complex projects that involve several campus units the Secretary to the Trustees’ Buildings and Property Committee in consultation with the Chair of the Trustees’ Buildings and Property Committee will decide if additional user and Trustee representation is warranted.

Procedure
• Committee Chair approval of short list.
• Selection committee interview with trustee.
• Buildings and Property Committee selection or rejection.
DESIGN-BUILD SELECTION

Required
The Design-Build delivery method is utilized for less complex new buildings and renovation projects. Projects over $1,000,000 require one current or former Trustee on the selection committee.

Procedure
• Committee Chair approval of short list.
• Selection committee interview.
• Buildings and Property Committee selection or rejection.

NON-APPROPRIATED CAPITAL IMPROVEMENT PROJECTS

Required
The UNC Board of Governor’s delegated authority to approve and administer non-appropriated capital improvement projects funded entirely with non-General Fund money projected to cost greater than $300,000 and less than $750,000.

Procedure
• University Administration recommendation.
• Buildings and Property Committee approval or rejection.

SITE SELECTION

Procedure
• Project building committee recommendation.
• University Administration recommendation.
• Buildings and Property Committee selection (Space Committee approves temporary structures in research annexes).

PLANS AND SPECIFICATIONS

Required
Approval of projects less than $2,000,000 – based on recommendations presented in quarterly Status Reports from Facilities Division.
Approval of projects greater than $2,000,000 – review site plan, floor plans, elevations, perspective models, and budget between design development and construction document stages.

Procedure
• Facilities Division staff recommendation.
• Ad-hoc Building Committee recommendation.
• Campus Design Review Panel recommendation.

ACCEPT COMPLETED BUILDINGS AND PROJECTS

Required
Acceptance following University and State Construction Office certification.

PROPERTY MATTERS

Required
Approval/recommendation for:
- Property purchase and sale
- Property leases
- Utility easements
- Demolitions
Procedure
University Administration recommendation
Buildings and Property Committee approval/recommendation
Full Board decision if required by scope

BUILDINGS AND PROPERTY POLICIES
Procedure
University Administration recommendation
Buildings and Property recommendation
Full Board decision

TRAFFIC AND PARKING POLICIES
Procedure
University Administration recommendation
Buildings and Property recommendation
Full Board decision
Minutes

Meeting No. 18-19:4

Location: Winslow Hall Conference Room

Time: 10:15 – 11:40 a.m.

Committee Members Present:
Mr. Chip Andrews, Chair
Mr. Stan Kelly
Mr. Wendell Murphy
Mr. Ven Poole
Mr. Dewayne Washington
Mr. Ed Weisiger, Jr.

Other Board of Trustees Members Present
Mr. John Cabaniss
Mr. Jimmy Clark
Mrs. Ann Goodnight
Mr. Jim Harrell, Ill
Mr. Ron Prestage
Ms. Susan Ward
Ms. Jess Errico

Present from the University:
Chancellor, Randy Woodson
Mr. Imran Aukhil, Assistant Director, University Real Estate and Development
Ms. Jessie Askew, University Program Specialist, University Real Estate & Development
Mr. Mark Hoit, Vice Chancellor for IT & CIO, Office of Information Technology
Mr. Kevin Howell, Vice Chancellor, External Affairs, Partnerships & Economic Development
Ms. Lisa Johnson, University Architect
Mr. Mike Kennon, Assistant Transportation Director, Planning and Operations
Mr. Doug Morton, Associate Vice Chancellor, Facilities Division
Ms. Barbara Moses, Associate Vice Chancellor, Budget & Resource Management
Dr. Michael Mullen, Vice Chancellor and Dean, Academic Student Affairs
Ms. Allison Newhart, Vice Chancellor & General Counsel, Office of General Counsel
Ms. Mary Peloquin-Dodd, Interim, Vice Chancellor, Finance and Administration
CALL TO ORDER
Chair Andrews called the meeting to order at 10:17 a.m.

ROLL CALL
Chair Andrews called the roll. All members were present.

STATE GOVERNMENT ETHICS ACT
Chair Andrews reminded all members of their duty to avoid conflicts of interest and appearances of conflicts of interest under the State Government Ethics Act. He inquired as to whether there were any known conflicts of interest with respect to any matters coming before the Buildings and Property Committee at this meeting.

MINUTES
Chair Andrews asked whether there were any corrections to the February 21, 2019 meeting minutes. There being none, Andrews declared the minutes approved as drafted.

PROPERTY MATTERS
Chair Andrews asked Ms. Jessie Askew to present the two property matters that require committee approval only.

- Disposition by easement. The City of Raleigh has requested the conveyance of several easements in connection with their proposed Tryon Road Widening Project – Part C. The proposed project improvement will affect State owned lands located on the eastern side of Lake Wheeler Road in Raleigh, NC., being a part of the NC State University Lake Wheeler Research Field Labs. The disposition of the easement areas will be for new right of way, permanent slope easements, permanent drainage easements, electrical utility easements, and temporary construction easements. The conveyance areas will contain +/- 9,831 sf. ~ .2257 ac.

- Disposition by easement. The City of Raleigh has requested the Conveyance of an easement in connection with a proposed drainage improvement project along Sierra Drive and Balboa Road. The proposed project will necessitate the removal of a 42” exiting pipe to be replaced by a box culvert system. The improvement will affect State owned lands located northeast of Balboa Road in Raleigh, NC, being a part of the NC State University Centennial Campus. The disposition of the easement area will be for a permanent drainage easement. The conveyance area will contain +/- 8,022 sf. ~ .1842 ac.

Chair Andrews called for a motion and a second to recommend acceptance as outlined. Mr. Kelly made the motion, which Mr. Weisiger seconded. Chair Andrews asked if there was any further discussion on the motion. There being none, he called for a vote. He announced the motion passed.
FULL BOARD APPROVAL
Chair Andrews asked Ms. Van-Roekel to present the three property matters that require full board committee approval. A motion to approve these items will be needed.

√ Disposition by Property Exchange. Exchange of real property between the State of North Carolina on behalf of North Carolina State University and the Board of Trustees of the Endowment Fund of North Carolina State University for equal sized acreage on Centennial Campus. The acreage received by the Endowment will supplement the property exchange approved by the BPC/BOT in September 2017 and will be used to further public/private partnership opportunities related to the new development on north Centennial Campus consistent with the master land-use plan. Final quantity, description and exact location of the exchange will be determined by survey and is expected to be approximately +/- 9.2 acres.

√ Disposition by Lease to VHB Engineering NC, P.C. (or affiliated subsidiary) for +/- 7,200 SF of office space at Partners I on Centennial Campus. This space lease is an expansion of VHB’s current 18,000 SF space in Venture I on Centennial Campus. Disposition is recommended for partnership with the University and contribution to the Innovation Ecosystem on Centennial Campus.

√ Disposition by Lease to C2I, LLC, (an affiliated non-profit entity controlled by the North Carolina State University Partnership Corp to further the educational and charitable purposes of the University), for +/- 22,000 SF of office and high-bay with mezzanine space at Partners I on Centennial Campus. Disposition is recommended to facilitate operation of a high-density co-working and incubation space and to accommodate growth of the NCSU Entrepreneurship Garage, consistent with the University’s mission.

Chair Andrews called for a motion and a second to recommend acceptance as outlined. Mr. Washington made the motion, which Mr. Weisiger seconded. Chair Andrews asked if there was any further discussion on the motion. There being none, he called for a vote. He announced the motion passed.

DESIGNER SELECTIONS
Chair Andrews called for a motion and a second to recommend approval of the designer selections as outlined by Mr. Morton. Mr. Weisiger made the motion, which Mr. Kelly seconded. Chair Andrews asked if there was any further discussion on the motion. There being none, he called for a vote. He announced the motion passed.

ACCEPTANCE OF COMPLETED BUILDINGS AND PROJECTS
Chair Andrews asked Mr. Morton to present the completed buildings and projects for acceptance. Mr. Morton requested acceptance of eleven completed projects listed with a combined value of $36,137,391, which included the Founders Drive Extension, CC Thermal Utilities & Infrastructure, and CCUP Cogeneration& Building Addition.

Chair Andrews called for a motion and a second to recommend acceptance as outlined by Mr. Morton. Mr. Weisiger made the motion, which Mr. Kelly seconded. Chair Andrews asked if there was any further discussion on the motion. There being none, he called for a vote. He announced the motion passed.
PARKING AND TRANSPORTATION
Chair Andrews stated the Parking and Transportation policy is updated annually and reviewed by the board every April. Chair Andrews asked Mr. Rainer to present the proposed revisions to Policy 07.60.1 Parking & Transportation Ordinances 2019-2020. Mr. Rainer requested approval to move the matter to the Full Board for approval. Chair Andrews called for a motion and Mr. Washington made the motion, which Mr. Kelly seconded. Chair Andrews asked if there was any further discussion on the motion. There being none, he called for a vote. He announced the motion passed.

PHYSICAL MASTER PLAN
Chair Andrews asked Ms. Johnson to present the Physical Master Plan update. Ms. Johnson distributed material for this presentation. Ms. Johnson provided an overview of the overarching concepts of the 2014 Physical Master Plan, noted the Physical Master Plan is updated every 5 to 7 years, and we are due for an update next year.

Ms. Johnson reviewed the 2017 Campus Capacity and Assessment Study. The study complements the Physical Master Plan as a high-level overlay and guiding document. She reviewed a couple of the strategies from the study that are moving forward: Engaging Hillsborough Street with active uses and re-envisioning Cates Avenue to make it more pedestrian friendly. Ms. Johnson discussed the Hillsborough Street Campus Edge planning, noting the areas that are considered good, and the three hubs of opportunity to continue the progress along Hillsborough Street.

Ms. Johnson noted that the D.H. Hill entrance project, currently under construction, will open the front doors of the library for the first time in almost 30 years. The project includes redevelopment of the exterior space in front of the building and to the west along Founders Drive. Ms. Johnson reviewed how the project will create a better pedestrian entrance by removing barriers, providing a strong arrival sequence, and clarifying the paths to the building entrance and to the Brickyard.

Ms. Johnson described the Global Courtyard project, adjacent to Primrose Hall, and the re-envisioning of Cates Avenue.

Ms. Johnson reviewed the major capital projects underway: Academic Success Center in DH Hill Library, the Carmichael Addition and Renovation, Fitts-Woolard Hall and the Plant Sciences Building.

Ms. Johnson discussed the electrical distribution replacement project on North and Central campuses and the impacts it will have on transportation during implementation. She reviewed the impacts to campus due to the NCDOT I-440 Widening project.

SITE AND PLAN APPROVAL
Chair Andrews asked Ms. Johnson to present the site and plan review/approval for the Memorial Belltower Renovation. Ms. Johnson noted that the project will install a 55 bell carillon in conjunction with the repair, restoration and preservation of this iconic structure. The repairs include resolving the water infiltration issues, cleaning and repointing the granite, restoration of the Shrine Room, replacement of the clock works and lighting/power improvements. Site improvements will address deterioration of the concourse and plinth areas and includes an accessible path to the plinth.
Chair Andrews called for a motion and a second to approve the site for the Memorial Bell Tower Renovation. Mr. Washington made the motion, which Mr. Kelly seconded. Chair Andrews asked if there was any further discussion on the motion. There being none, he called for a vote. The motion passed.

Chair Andrews called for a motion and a second to approve the design plan for the Memorial Bell Tower. Mr. Washington made the motion, which Mr. Kelly seconded. Chair Andrews asked if there was any further discussion on the motion. There being none, he called for a vote. The motion passed.

**APPROVAL OF PLANS AND SPECS OF FORMAL PROJECTS LESS THAN $2 MILLION**

Plans and Specifications of Formal Projects less than $2 million. Ms. Johnson requested acceptance of 6 projects listed with a combined value of $1.5 million.

Chair Andrews called for a motion and a second to recommend approval of the Plans and Specifications of Formal Projects less than $2 million as outlined by Ms. Johnson. Mr. Weisiger made the motion, which Mr. Murphy seconded. Chair Andrews asked if there was any further discussion on the motion. There being none, he called for a vote. The motion passed.

**INFORMATIONAL REPORTS**

Chair Andrews recognized Mr. Morton to present the update for Capital Projects. Mr. Morton noted the update is to provide committee members information on projects in design, construction and those recently completed. Mr. Morton discussed the North and Central Electrical Distribution – Phase 1, and provided samples of existing electrical damaged lines.

Chair Andrews recognized Ms. Johnson to provide an update on Projects in Planning. Ms. Johnson presented the update.

There being no additional business, the meeting adjourned at 11:40 a.m.

Respectfully submitted,

D. G. Morton
Secretary to the Committee

cc: Mary Peloquin-Dodd, Interim, Vice Chancellor, Finance & Administration
    P.J. Teal, Assistant Secretary of the Trustees

Approved: ___________________________________________  __________________________

Committee Chair                                      Date
DISPOSITION
OF REAL PROPERTY

DISPOSITION OF REAL PROPERTY BY LEASE

LESSOR   The State of North Carolina, North Carolina State University

LESSEE   SAF Ventures, LLC dba Tread Happy (or affiliated entity)

LOCATION 2010 Hillsborough Street, Raleigh, NC

SIZE ± 2,134 rentable square feet

RATE +/-26.50/rsf (approximately $56,550/yr) with 2.0% annual increases

TERM (3) year and four (4) month term

USE Disposition is recommended to provide income for the maintenance and upkeep of the property.
STATE OF NORTH CAROLINA
DEPARTMENT OF ADMINISTRATION
DISPOSITION OF REAL PROPERTY

Institution or Agency: **North Carolina State University**  Date: September 12, 2019

The Department of Administration is requested, as provided by GS §146-28 et seq., to dispose of the real property herein described by *purchase, lease, rental, or other (specify)*. **Lease**

This disposition is recommended for the following reasons:

North Carolina State University requests to dispose of property by space lease to SAF Ventures, LLC dba Tread Happy (or affiliated entity) previously leased retail space at 2010 Hillsborough Street. This property disposition by space lease will provide income for the maintenance and upkeep of the property.

Description of Property: *(Attach additional pages if needed.)*

+/- 2,134 total rentable square feet of retail space on at 2010 Hillsborough Street, Raleigh, NC

Estimated value: **Initial year’s total annual rent is +/-856,550.00 (escalating annually by 2.0%)**

Where deed is filed, if known: **N/A**

If deed is in the name of agency other than applicant, state the name:

**N/A**

Rental income, if applicable, and suggested terms:

**Forty (40) month term beginning in September 2019**

Short term (one to six months) renewal options upon initial lease term expiration +/-$26,50/RSF/Yr, NNN, escalating annually by 2.0%

Tenant responsible for TICAM, which is estimated to be $5.50/RSF

Funds from the disposal of this property are recommended for the following use:

**Net proceeds of the rental revenue will revert to the NC State Property Office**

*(Complete if Agency has a Governing Board.)*

Action recommending the above request was taken by the **Board of Trustees** and is recorded in the meeting minutes thereof on _______________ (date).

Signature:  
Title: **Chancellor**
ACQUISITION
OF REAL PROPERTY

LEASE

LESSOR To be determined

LESSEE State of North Carolina on behalf of NC State University’s Small Business and Technology Development Center (“SBTDC”)

LOCATION To be determined. Close proximity business district in Buncombe, Haywood, Henderson, Madison, McDowell, Polk, Rutherford, and Transylvania counties in western North Carolina

SIZE +/- 1,600 rentable square feet of real property.

RATE Not to exceed $20.00/1,600 rsf = $32,000/year with 3% annual increases

TERM One (1) to Three (3) year term

USE Acquisition by lease. North Carolina State University, on behalf of the Small Business and Technology Development Center (“SBTDC”), whose existing space lease expires on September 30, 2019, requests a lease for strategic office space, preferably in its current or comparable location, to house its regional offices in Asheville, NC. SBTDC requires space to meet confidentially with business owners in order to counsel and provide entrepreneurs with the tools they need to build and grow successful businesses which positively impacts NC’s economy.
* ACQUISITION OF REAL PROPERTY

Institution or Agency: North Carolina State University

Date: September 12, 2019

The Department of Administration is requested, as provided by GS 146-22 et seq. to acquire the real property herein described by (purchase), (lease), (rental), or (other specify):

This Property is needed for the following reasons and purposes: North Carolina State University, on behalf of the Small Business and Technology Development Center (“SBTDC”), whose existing space lease expires on September 30, 2019, requests a lease for strategic office space, preferably in its current or comparable location, to house its regional offices in Asheville, NC. SBTDC requires space to meet confidentially with business owners in order to counsel and provide entrepreneurs with the tools they need to build and grow successful businesses which positively impacts NC’s economy.

Name and Address of Present Owner: To be determined. SBTDC Western Carolina Regional Office is currently located at 46 Haywood Street, Suite 212, Asheville, NC (owned by FIRC Haywood Park Holdings, LLC; whose address is 46 Haywood Street, Suite 340, Asheville, NC)

Description of Property: (attach additional sheets if necessary).
Commercial office space in Asheville, Buncombe County, NC with close proximity to business districts in western NC (exact location to be determined based on availability); ±1,600 rentable square feet of office and meeting space.

Term: One (1) to three (3) year term

Rental price (if applicable): Not to exceed $20.00/ rentable square feet = $32,000/year with 3% annual increases. Cost includes utilities, janitorial services, and required maintenance.

Funding: 100% Appropriated Funding

Item: Acct. # 211022-54995

Other:

In the event the above described real property is not acquired, is there other real property available, owned by the State or otherwise, that you believe would, if acquired, fulfill the requirement of your agency? If so, give details. No.

Action, recommending the above request, was taken by the Board of Trustees and is recorded in the minutes thereof on _____________, 2019.

Signature

Chancellor

* The term "real property" includes timber rights, mineral rights, etc. (GS 146-64)
Vicinity Map

46 Haywood Street – SBTDC Western Carolina current location
Asheville, NC
GRANTOR   The State of North Carolina

GRANTEE   City of Raleigh

LOCATION   Main Campus Drive, Centennial Campus, North Carolina State University, Raleigh, NC

SIZE       1,400 sf (+/- 0.321 ac.)

RATE       $3,931.38 (Benefit)

TERM       Perpetual Utility Easement

USE        Disposition by easement. The City of Raleigh has requested an amendment of an existing utility easement to allow for the continuing development of Centennial Campus. A portion of the existing easement along Main Campus Drive will be realigned in length and route to allow the City of Raleigh to operate within existing infrastructure installed by the university.
Institution or Agency: State of North Carolina

Date: July 31, 2019

The Department of Administration is requested, as provided by GS 146-28 to dispose of the real property herein described by (sale), (lease), (rental), or (other specify): Utility Easement

The disposition is recommended for the following reasons:

Disposition by easement. The City of Raleigh has requested an amendment of an existing utility easement to allow for the continuing development of Centennial Campus. A portion of the existing easement along Main Campus Drive will be realigned in length and route to allow the City of Raleigh to operate within existing infrastructure installed by the university.

Description of Property:
The property is located on Main Campus Drive on Centennial Campus, North Carolina State University, Raleigh, North Carolina. The proposed new easement will run in a northwesterly direction off of Main Campus Drive along Alumni Drive, then southwest to its intersection with Main Campus Drive. The proposed new easement area is ten (10) feet wide and approximately 1400 feet long (±/- 0.321 acres).

Term: Perpetual

Estimated value: $3,931.38 (Benefit)

Where deed is filed, if known: Wake County Register of Deeds

If deed is in the name of agency other than applicant, state the name. N/A

Rental income, if applicable, and suggested terms: N/A

Funds from the disposal of this property are recommended for the following use. N/A

Action recommending this transaction was taken by the Building and Property Committee of the Board of Trustees at its meeting held on ____________, 2019.

Signature ____________________________
Chancellor

*The term "real property" includes timber rights, mineral rights, etc. (GS 146-64)
Vicinity Map
Main Campus Drive, Centennial Campus, NC State University, Raleigh, NC
City of Raleigh Water Main Easement

SITE
Main Campus Drive
DISPOSITION OF REAL PROPERTY EASEMENT

GRANTOR  The State of North Carolina

GRANTEE  Duke Energy Progress

LOCATION  8800 Cassam Road, Bahama, Granville County, NC

SIZE      119,320 sf (+/- 2.74 ac.)

RATE      $8,292.82 (Benefit)

TERM      Perpetual Utility Easement

USE      Disposition by easement. Duke Energy Progress has requested the conveyance of a utility easement to install a power line on and for the benefit of the NCSU Butner Beef Cattle Field Lab (BBCFL) property. The power line will run from an existing service line on the BBCFL property to a well located on an adjacent property leased by BBCFL.
State of North Carolina  
Department of Administration  
*DISPOSITION OF REAL PROPERTY*

**Institution or Agency:** State of North Carolina  
**Date:** July 31, 2019

The Department of Administration is requested, as provided by GS 146-28 to dispose of the real property herein described by (sale), (lease), (rental), or (other specify): Utility Easement

The disposition is recommended for the following reasons:
Disposition by easement. Duke Energy Progress has requested the conveyance of a utility easement to install a power line on and for the benefit of the NCSU Butner Beef Cattle Field Lab (BBCFL) property. The power line will run from an existing service line on the BBCFL property to a well located on an adjacent property leased by BBCFL.

**Description of Property:**
SPO File # 39-019, Land Asset ID 6865. The property is located at 8800 Cassam Road in Granville County. The proposed easement area is 20 feet wide and 5,966 feet long (+/- 2.74 acres).

**Term:** Perpetual

**Estimated value:** $8,292.82 (Benefit)

**Where deed is filed, if known:** Durham County Register of Deeds  
Granville County Register of Deeds

If deed is in the name of agency other than applicant, state the name. N/A

**Rental income, if applicable, and suggested terms:** N/A

**Funds from the disposal of this property are recommended for the following use.** N/A

Action recommending this transaction was taken by the Building and Property Committee of the Board of Trustees at its meeting held on ____________, 2019.

Signature ________________________________  
Chancellor

*The term "real property" includes timber rights, mineral rights, etc. (GS 146-64)*
Vicinity Map
Butner Beef Cattle Field Lab (BBCFL)
Duke Energy Progress Easement
Proposed Easement Area Map
Butner Beef Cattle Field Lab (BBCFL)
Duke Energy Progress Easement

Proposed Power Line & Easement on BBCFL property from existing service

Extension onto NCDA&CS property

Future well

End of existing service
DISPOSITION
OF REAL PROPERTY
EASEMENT

GRANTOR  The State of North Carolina

GRANTEE  AT&T

LOCATION  3121 Ligon Street, Raleigh, NC

SIZE  120 sf (+/- 0.0028 ac.)

RATE  $378.00 (Benefit)

TERM  Perpetual Utility Easement

USE  Disposition by easement. AT&T has requested the conveyance of an easement for installation of underground fiber optic cable from an existing manhole on Method Rd to a communication room located at 3121 Ligon Street to provide a redundant connection of the 911 circuit between NC State Campus Police and the Wake County 911 Center.
STATE OF NORTH CAROLINA
Department of Administration
*DISPOSITION OF REAL PROPERTY

Institution or Agency: State of North Carolina Date: July 31, 2019

The Department of Administration is requested, as provided by GS 146-28 to dispose of the real property herein described by (sale), (lease), (rental), or (other specify): Utility Easement

The disposition is recommended for the following reasons:
Disposition by easement. AT&T has requested the conveyance of an easement for installation of underground fiber optic cable from an existing manhole on Method Rd to a communication room located at 3121 Ligon Street to provide a redundant connection of the 911 circuit between NC State Campus Police and the Wake County 911 Center.

Description of Property:
The property is located at 3121 Ligon Street in Raleigh, North Carolina. The proposed easement area is ten (10) feet wide, and will be approximately twelve (12) feet long (+/- 0.0028 acres).

Term: Perpetual

Estimated value: $378.00 (Benefit)

Where deed is filed, if known: Wake County Register of Deeds

If deed is in the name of agency other than applicant, state the name. N/A

Rental income, if applicable, and suggested terms: N/A

Funds from the disposal of this property are recommended for the following use. N/A

Action recommending this transaction was taken by the Building and Property Committee of the Board of Trustees at its meeting held on ____________, 2019.

Signature____________________________ Chancellor

*The term "real property" includes timber rights, mineral rights, etc. (GS 146-64)
Vicinity Map
3121 Ligon Street, Raleigh NC
AT&T Easement

SITE
3121 Ligon Street

NC State University
Main Campus
Proposed Easement Area Map
3121 Ligon Street, Raleigh NC
AT&T Easement

Existing NCSU Manhole and Utilities

Proposed Easement Area:
12’ from Right of Way to Existing NCSU Manhole

AT&T will place fiber cable along R/W on Method Rd and then bury approx 12’ from R/W to NCSU manhole and then pull through NSCI duct bank to the 3121 Ligon Road Communication Room
DISPOSITION
OF REAL PROPERTY

DEMOLITION

GRANTOR  The State of North Carolina

GRANTEE  Not Applicable

LOCATION  Ligon Street, Raleigh, NC 27606
Small Animal Research Building at 3225 Ligon St. Raleigh, NC 27606
Modular Dinoflagellate Facility at 3227 Ligon St. Raleigh, NC 27606
Aquatic Research Fish Lab at 3229 Ligon St. Raleigh, NC 27606

SIZE  Aggregate total +/- 2,537 square feet
Small Animal Research Buildin +/- 700 square feet
Modular Dinoflagellate Facility +/- 708 square feet
Aquatic Research Fish Lab +/- 1,128 square feet

RATE  Not Applicable

TERM  Not Applicable

USE  This is Disposition by Demolition. The College of Agriculture and Life Sciences has requested the demolition of three structures located on West Campus on Ligon Street, due to poor condition of the structures. The structures are as follows the Small Animal Research Building, the Modular Dinoflagellate Facility, and the Aquatic Research Fish Lab.
STATE OF NORTH CAROLINA
Department of Administration
*DISPOSITION OF REAL PROPERTY

Institution or Agency:  State of North Carolina
Date:  7/31/2019

The Department of Administration is requested, as provided by GS 146-28 to dispose of the real property herein described by (sale), (lease), (rental), or (other specify):  Demolition

The disposition is recommended for the following reasons:
Disposition by Demolition.  The College of Agriculture and Life Sciences has requested the demolition of three structures located on West Campus on Ligon Street, have been abandoned for years and are in poor condition. The structures are as follows the Small Animal Research Building, the Modular Dinoflagellate Facility, and the Aquatic Research Fish Lab.

Description of Property:

<table>
<thead>
<tr>
<th>Building:</th>
<th>Construction:</th>
<th>Size:</th>
<th>Built:</th>
<th>Asset #</th>
<th>Condition:</th>
</tr>
</thead>
<tbody>
<tr>
<td>#163B (3225 Ligon St.) Small Animal Research</td>
<td>Single Story Building</td>
<td>700 sq. ft</td>
<td>1979</td>
<td>308</td>
<td>Poor</td>
</tr>
<tr>
<td>#163C (3227 Ligon St.) Modular Dinoflagellate Facility</td>
<td>Single Story Building</td>
<td>709 sq. ft</td>
<td>1993</td>
<td>309</td>
<td>Poor</td>
</tr>
<tr>
<td>#163D (3229 Ligon St.) Aquatic Research Fish Lab</td>
<td>Single Story Building</td>
<td>1129 sq. ft</td>
<td>1996</td>
<td>8000086</td>
<td>Poor</td>
</tr>
</tbody>
</table>

Term:  N/A
Estimated value:  N/A
Where deed is filed, if known:  Wake County Register of Deeds.
If deed is in the name of agency other than applicant, state the name.  N/A
Rental income, if applicable, and suggested terms:  N/A
Funds from the disposal of this property are recommended for the following use.  N/A
Action recommending this transaction was taken by the Building and Property Committee of the Board of Trustees at its meeting held on _______________, 2019.

Signature____________________________  Chancellor

*The term "real property" includes timber rights, mineral rights, etc. (GS 146-64)
Modular Dinoflagellate Facility

Small Animal Research

Aquatic Research Fish Lab,
DISPOSITION
OF REAL PROPERTY

DEMOLITION

GRANTOR  The State of North Carolina

GRANTEE  Not Applicable

LOCATION  Centennial Campus Info Booth at 1702 Varsity Dr. Raleigh, NC 27606

SIZE  +/- 200 square feet

RATE  Not Applicable

TERM  Not Applicable

USE  This is a Disposition by Demolition. The Real Estate Department has requested the demolition of the Centennial Campus Information Booth located on Centennial Campus at Varsity Drive due to poor condition of the structure.
STATE OF NORTH CAROLINA  
Department of Administration  
*DISPOSITION OF REAL PROPERTY

Institution or Agency: State of North Carolina  
Date: 7/31/2019

The Department of Administration is requested, as provided by GS 146-28 to dispose of the real property herein described by (sale), (lease), (rental), or (other specify):  Demolition

The disposition is recommended for the following reasons:
Disposition by Demolition. The Real Estate Department has requested the demolition of the Centennial Campus Information Booth located on Centennial Campus at Varsity Drive due to poor condition of the structure.

Description of Property:

<table>
<thead>
<tr>
<th>Building:</th>
<th>Construction:</th>
<th>Size:</th>
<th>Built:</th>
<th>Asset #</th>
<th>Condition:</th>
</tr>
</thead>
<tbody>
<tr>
<td>#717 (1702 Varsity Dr.) Centennial Campus Info Booth</td>
<td>Single Story Building</td>
<td>200 sq. ft</td>
<td>2001</td>
<td>35</td>
<td>Poor</td>
</tr>
</tbody>
</table>

This is a disposition by demolition of a single-story building containing +/- 200 square feet. The improvements are located at the Centennial Campus Info Booth at 1702 Varsity Dr. Raleigh, NC 27606.

Term: N/A  
Estimated value: N/A  
Where deed is filed, if known: Wake County Register of Deeds.  
If deed is in the name of agency other than applicant, state the name: N/A  
Rental income, if applicable, and suggested terms: N/A  
Funds from the disposal of this property are recommended for the following use: N/A  
Action recommending this transaction was taken by the Building and Property Committee of the Board of Trustees at its meeting held on ______________, 2019.

Signature____________________________  
Chancellor

*The term "real property" includes timber rights, mineral rights, etc. (GS 146-64)
ACQUISITION
OF REAL PROPERTY

ACQUISITION OF REAL PROPERTY BY PURCHASE

GRANTOR  Ralph L. Sorrell (50% Interest)
          Glenn L. Sorrell, as Trustee of the GJS Charitable Remainder Unitrust (50%
          Interest)

GRANTEE   The State of North Carolina for and on behalf of North Carolina State University

LOCATION  3904 Granny Farm Road
          Clayton, Wake County, NC, 27520

SIZE      +/- 40.99 acres

RATE      +/- $1,290,000.00, the final amount to be determined by appraisal

TERM      Perpetual Use

USE       This property will be an addition to the existing Central Crops Research Station.
The College of Agriculture and Life Sciences currently leases this property for the
study of weed management.
STATE OF NORTH CAROLINA
DEPARTMENT OF ADMINISTRATION
RALEIGH

* ACQUISITION OF REAL PROPERTY

Institution or Agency: State of North Carolina                Date: July 31, 2018

The Department of Administration is requested, as provided by GS 146-22 et seq. to acquire the real property herein described by (purchase), (lease), (rental), or (other specify): 40.99 +/- acres located along the north side of U.S. Highway 70 in Wake County, NC.

This Property is needed for the following reasons and purposes: (attach additional sheets if necessary).
The Property would be an addition to the existing Central Crops Research Station. The College of Agriculture and Life Sciences currently leases the property for the study of weed management.

Name and Address of Present Owner:
Ralph L. Sorrell (50% interest) and
Glenn L. Sorrell, as Trustee of the GJS Charitable Remainder Unitrust (50% interest)

Description of Property: (attach additional sheets if necessary).
The subject area is located at 3904 Granny Farm Road, Clayton, NC 27520. Further describe as PIN 1740-40-7897 in the Wake Co. Land Records Department. The proposed acquisition will involve +/- 40.99 +/- acres of the property.

See attached exhibit.

Term: Perpetual Use

Rental price (if applicable): Not applicable.

Funds for the acquisition of this property are available in our budget under Code

Item: Account No. 762265            Other:

In the event the above described real property is not acquired, is there other real property available, owned by the State or otherwise, that you believe would, if acquired, fulfill the requirement of your agency? If so, give details. No.

Action, recommending the above request, was taken by the Board of Trustees and is recorded in the minutes thereof on ______________ (Date).

Signature ____________________________
Chancellor

* The term "real property" includes timber rights, mineral rights, etc. (GS 146-64)
Proposed Acquisition – Sorrell Farm

3904 Granny Farm Road, Clayton, NC
Central Crops Research Station - Proposed Acquisition

- Existing Central Crops Research Station Property
- Proposed Acquisition - Sorrell Farm

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus
ACQUISITION OF REAL PROPERTY

ACQUISITION OF REAL PROPERTY BY PURCHASE

GRANTOR   Nancy A. Perry, as Trustee of the Perry Family Irrevocable Trust (successors and assigns).

GRANTEE   The State of North Carolina for and on behalf of North Carolina State University

LOCATION  3416 Lake Wheeler Road
           Raleigh, Wake County, NC, 27603

SIZE      +/- 12 acres (exact acreage to be determined by survey)

RATE      +/- $1,000,000 (the final amount to be determined by appraisal)

TERM      Perpetual Use

USE       This property is centrally located within Lake Wheeler Field Lab and will be a strategic acquisition for the university.
STATE OF NORTH CAROLINA
DEPARTMENT OF ADMINISTRATION
RALEIGH

* ACQUISITION OF REAL PROPERTY

Institution or Agency: State of North Carolina                   Date: July 31, 2018

The Department of Administration is requested, as provided by GS 146-22 et seq. to acquire the
real property herein described by (purchase), (lease), (rental), or (other specify):
+/- 12 acres (exact acreage to be determined by survey) located along Lake Wheeler Road in Wake
County, NC.

This Property is needed for the following reasons and purposes: (attach additional
sheets if necessary).
The Property would be a strategic addition to the Lake Wheeler Field Lab.

Name and Address of Present Owner:
Nancy A. Perry, as trustee of The Perry Family Irrevocable Trust (successors and assigns)
3504 Lake Wheeler Road
Raleigh, NC 27603

Description of Property: (attach additional sheets if necessary).
The subject area is located at 3416 Lake Wheeler Road, Raleigh, NC 27603. Further describe as PIN
0792316933 in the Wake Co. Land Records Department. The proposed acquisition will involve +/- 12
acres of the property currently owned by The Perry Family Irrevocable Trust, as determined by survey.

See attached exhibit.

Term: Perpetual Use

Rental price (if applicable): Not applicable.

Funds for the acquisition of this property are available in our budget under Code

Item: Account No. 762265 Other:

In the event the above described real property is not acquired, is there other real property
available, owned by the State or otherwise, that you believe would, if acquired, fulfill the
requirement of your agency? If so, give details. No.

Action, recommending the above request, was taken by the Board of Trustees and is
recorded in the minutes thereof on _____________ (Date).

Signature ___________________________ Chancellor

* The term "real property" includes timber rights, mineral rights, etc. (GS 146-64)
Proposed Acquisition – Perry Property

3416 Lake Wheeler Road, Raleigh, NC
**Interior Renovations Erdahl-Cloyd**

Total Project Scope – $1.5M (Receipts/F&A)

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03/06/19  Advertised in NC Purchase Directory

03/27/19  Closing date for submittals
           (17 proposals received)

04/17/19  Appointment of Selection Committee
           By Doug Morton, Secretary – Buildings and Property Committee

04/17/19-05/22/19  Selection Committee review:
   Dewayne Washington, Trustee
   Greg Raschke, Libraries
   Lisa Johnson, University Architect
   Cameron Smith, Capital Project Management
   Mike Kapp, Project Manager
   Rich Berlin, Campus Enterprises
   Patrick Deaton, Libraries
   Shawn Hoch, Campus Enterprises
   Danelle Gambrell, Capital Project Management
   Others who assisted in review and short listing process
   Bill Davis, Capital Project Management
   Charlie Marshall, Capital Project Management
   Erin Kopf, Capital Project Management
   Jimmy Wright, Campus Enterprises

04/17/19  Short list recommendation by Selection Committee:
   Gensler - Raleigh, NC
   Hanbury - Raleigh, NC
   Watson Tate Savory - Charlotte, NC

04/18/19  Short list approved by Robert F. Andrews

05/02/19  Pre-interview briefing of Designers

05/22/19  Designers interviewed. Recommendation in priority order:
   Hanbury - Raleigh, NC
   Watson Tate Savory - Charlotte, NC
   Gensler - Raleigh, NC
Jordan Hall Library Renovation
Total Project Scope – $1.5M (Carry Forward)

05/31/19 Advertised in NC Purchase Directory

06/21/19 Closing date for submittals
(17 proposals received)

07/10/19 Appointment of Selection Committee
By Doug Morton, Secretary – Buildings and Property Committee

07/10/19- 08/14/19 Selection Committee review:
Stan Kelly, Trustee
Mary Watzin, College of Natural Resources
Shane Jarvis, College of Natural Resources
Lisa Johnson, University Architect
Laura Zaytoun, Project Manager
Patrick Deaton, Libraries
Carolyn, Argentati, Libraries
Cameron Smith, Capital Project Management
Others who assisted in review and short listing process
John Blondin, College of Sciences
Bill Davis, Capital Project Management
Myron Floyd, Parks, Recreation & Tourism
Danelle Gambrell, Capital Project Management
Erin Kopf, Capital Project Management
Robert Olendorf, Libraries

07/12/19 Short list approved by Robert F. Andrews

08/02/19 Pre-interview briefing of Designers

08/14/19 Designers interviewed. Recommendation in priority order:
Watson Tate Savory – Charlotte, NC
Gensler – Raleigh, NC
Moseley Architects – Raleigh, NC
**Wrestling Addition & Renovation**
*Total Project Scope – $2.5M (Athletic Receipts)*

- **05/24/19** Advertised in NC Purchase Directory
- **06/14/19** Closing date for submittals
  - (5 proposals received)
- **06/26/19** Appointment of Selection Committee
  - By Doug Morton, Secretary – Buildings and Property Committee
- **06/26/19-07/31/19** Selection Committee review:
  - Dewayne Washington, Trustee
  - Lisa Johnson, University Architect
  - Laura Zaytoun, Project Manager
  - Michael Lipitz, Athletics
  - John Portland, Athletics
  - Cameron Smith, Capital Project Management
  - Others who assisted in review and short listing process
    - Ray Brincefield, Athletics
    - Bill Davis, Capital Project Management
    - Shon Burch-Crispin, Capital Project Management
    - Danelle Gambrell, Capital Project Management
- **06/26/19** Short list recommendation by Selection Committee:
  - Barnhill Contracting Company. (w/ Oakley Collier Architects) – Raleigh, NC
  - MLB Construction (w/ Davis Kane Architects) – Apex, NC
  - Romeo Guest Associates (w/ Integrated Design) – Durham, NC
- **06/26/19** Short list approved by Robert F. Andrews
- **07/18/19** Pre-interview briefing of Designers
- **07/31/19** Design-Build teams interviewed. Recommendation in priority order:
  - Romeo Guest Associates (w/ Integrated Design) – Durham, NC
  - MLB Construction (w/ Davis Kane Architects) – Apex, NC
  - Barnhill Contracting Company. (w/ Oakley Collier Architects) – Raleigh, NC
Dairy Facility-CVM
Total Project Scope – $4.8M (CVM Trust)

06/06/19 Advertised in NC Purchase Directory

07/10/19 Closing date for submittals
(7 proposals received)

07/24/19 Appointment of Selection Committee
By Doug Morton, Secretary – Buildings and Property Committee

07/24/19- Selection Committee review:
08/12/19 Ron Prestage, Trustee
Lisa Johnson, University Architect
Melanie Butler, Project Manager
Milburn Holbrook, College of Veterinary Medicine
Laura Nelson, College of Veterinary Medicine
Derek Foster, College of Veterinary Medicine
Cameron Smith, Capital Project Management
Others who assisted in review and short listing process
Bill Davis, Capital Project Management
Charlie Marshall, Capital Project Management
Shon Burch-Crispin, Capital Project Management
Ken Satterwhite, College of Veterinary Medicine

07/24/19 Short list recommendation by Selection Committee:
HH Architecture – Raleigh, NC
RND Architects – Durham, NC
Szostak Design – Chapel Hill, NC

07/31/19 Short list approved by Jimmy D. Clark

08/06/19 Pre-interview briefing of Designers

08/12/19 Designers interviewed. Recommendation in priority order:
HH Architecture – Raleigh, NC
Szostak Design – Chapel Hill, NC
RND Architects – Durham, NC
Approval of Designer Selections for Projects $1M or Less

**Note:** The projects below are submitted to the Board of Trustees Buildings and Property Committee for formal approval of designer selections for projects for $1M or less that are not on the OESAD list. This listing represents designers selected since April 18, 2019.

<table>
<thead>
<tr>
<th>Project</th>
<th>Fee:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thomas Hall Laboratory Ventilation Risk Assessment</td>
<td>$19,244</td>
</tr>
<tr>
<td>Upgrade Interior Layout Plan- 9 Grad Units in Avent Ferry Residence Hall F</td>
<td>$7,200</td>
</tr>
<tr>
<td>Campus Pavement Assessment</td>
<td>$45,000</td>
</tr>
<tr>
<td>Centennial Campus Cogeneration Reverse Power Protection Upgrade</td>
<td>$18,000</td>
</tr>
<tr>
<td>Oberlin Ferndell Building Demo &amp; Site Improvements</td>
<td>$8,000</td>
</tr>
<tr>
<td>Toilet Renovations Design Study- McKimmon Center</td>
<td>$13,000</td>
</tr>
<tr>
<td>Plant Science Renderings</td>
<td>$7,800</td>
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<tr>
<td>Power to Varsity Research Building</td>
<td>$97,188</td>
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<tr>
<td>EB Oval- Move Management Services</td>
<td>$94,565</td>
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<tr>
<td>NSF Grant Infrastructure Cost Estimate- MRC</td>
<td>$9,750</td>
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<tr>
<td>Study for Scott Sterilization Core- Scott Hall</td>
<td>$29,364</td>
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<tr>
<td>Description</td>
<td>Cost</td>
</tr>
<tr>
<td>--------------------------------------------------</td>
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<tr>
<td>Study for Bird Wing - Scott Hall</td>
<td>$49,121</td>
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<td>Designer: O’Brien Atkins Associates</td>
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<tr>
<td>Source: Gifts</td>
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<tr>
<td>Deep Creek - Bridge Replacement</td>
<td>$7,800</td>
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<tr>
<td>Designer: Construction Engineering Services</td>
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<tr>
<td>Source: Trust Funds</td>
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<tr>
<td>West Campus Pavement Assessment</td>
<td>$9,000</td>
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<tr>
<td>Designer: The Wooten Company</td>
<td></td>
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<tr>
<td>Source: Repair and Renovations</td>
<td></td>
</tr>
<tr>
<td>Deep Creek - Bridge Replacement - GeoTech</td>
<td>$6,910</td>
</tr>
<tr>
<td>Designer: ATC Associates of NC</td>
<td></td>
</tr>
<tr>
<td>Source: Gifts</td>
<td></td>
</tr>
<tr>
<td>Study for Occupancy Verification - College of Textiles</td>
<td>$5,000</td>
</tr>
<tr>
<td>Designer: 310 Architecture + Interiors</td>
<td></td>
</tr>
<tr>
<td>Source: Repair and Renovations</td>
<td></td>
</tr>
</tbody>
</table>
## Acceptance of Completed Buildings and Projects

<table>
<thead>
<tr>
<th>Code/Item</th>
<th>Project#</th>
<th>Location</th>
<th>Title</th>
<th>Project Cost</th>
<th>University Acceptance</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>201924056</td>
<td>Dail Softball and Paul Derr Track</td>
<td>ACC TV Infrastructure</td>
<td>$140,846</td>
<td>7/22/2019</td>
</tr>
<tr>
<td>41624/316</td>
<td>201620022</td>
<td>Murphy Center</td>
<td>Murphy Sports Medicine</td>
<td>$1,900,000</td>
<td>7/30/2019</td>
</tr>
<tr>
<td>41524/336</td>
<td>201620009</td>
<td>Reedy Creek</td>
<td>Reedy Creek Equine Farm</td>
<td>$3,000,000</td>
<td>8/7/2019</td>
</tr>
<tr>
<td>41724/310</td>
<td>201720105</td>
<td>Price Music Center</td>
<td>Price Music Center HVAC Renovation</td>
<td>$850,000</td>
<td>8/7/2019</td>
</tr>
<tr>
<td>N/A</td>
<td>201924018</td>
<td>Paul Derr Track</td>
<td>Track Resurfacing-Paul Derr Track</td>
<td>$498,577</td>
<td>7/19/2019</td>
</tr>
<tr>
<td>41624/323</td>
<td>201620034</td>
<td>SAS Hall</td>
<td>Smoke Evacuation and Entry Door Replacement</td>
<td>$262,740</td>
<td>7/2/2019</td>
</tr>
<tr>
<td>N/A</td>
<td>201924042</td>
<td>Carroll Hall</td>
<td>Residence Room Ceiling Removal</td>
<td>$238,969</td>
<td>7/17/2019</td>
</tr>
<tr>
<td>N/A</td>
<td>201820120</td>
<td>Talley</td>
<td>Starbucks Upgrades</td>
<td>$231,360</td>
<td>7/20/2019</td>
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<tr>
<td>41824/321</td>
<td>201824143</td>
<td>MRC/Constructed Facilities Laboratory</td>
<td>Replacement of Falling Masonry at Overhead Soffits</td>
<td>$425,000</td>
<td>7/11/2019</td>
</tr>
<tr>
<td>41724/320</td>
<td>201724068</td>
<td>Nelson Hall</td>
<td>Roof Replacement</td>
<td>$299,826</td>
<td>7/11/2019</td>
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<tr>
<td>N/A</td>
<td>201820085</td>
<td>Student Health Services Center</td>
<td>Suite 2221 Counseling Offices Renovation</td>
<td>$271,555</td>
<td>7/1/2019</td>
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<tr>
<td>41624/325</td>
<td>201720058</td>
<td>Steam Tunnel Main Campus</td>
<td>Steam Tunnel Structural Repairs-Main Campus Phase 1</td>
<td>$783,015</td>
<td>6/27/2019</td>
</tr>
<tr>
<td>41524/339</td>
<td>201620012</td>
<td>Murphy Center</td>
<td>Murphy Center Broadcast Studio Phase 2</td>
<td>$2,800,000</td>
<td>6/18/2019</td>
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<tr>
<td>N/A</td>
<td>201935041</td>
<td>Campus Wide</td>
<td>Repair Founders Speed Table</td>
<td>$116,002</td>
<td>5/30/2019</td>
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<tr>
<td>N/A</td>
<td>201924012</td>
<td>Various Locations</td>
<td>ACC Network Electrical/Data for TV Cameras</td>
<td>$131,550</td>
<td>5/29/2019</td>
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<tr>
<td>N/A</td>
<td>201924004</td>
<td>Housing West Campus</td>
<td>Cooling Tower Replacement</td>
<td>$215,635</td>
<td>6/3/2019</td>
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<tr>
<td>41624/337</td>
<td>201720037</td>
<td>EH&amp;S</td>
<td>EH&amp;S HVAC Replacements Phase 1</td>
<td>$292,315</td>
<td>3/27/2019</td>
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<tr>
<td>41824/325</td>
<td>201820099</td>
<td>Erdahl-Cloyd</td>
<td>North Entry Erdahl-Cloyd Wing</td>
<td>$364,543</td>
<td>5/13/2019</td>
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<tr>
<td>41324/357</td>
<td>201320007</td>
<td>Central Campus</td>
<td>Central Campus Electrical Upgrades Phase 1 Alternate 1</td>
<td>$704,884</td>
<td>5/3/2019</td>
</tr>
<tr>
<td>41324/357</td>
<td>201320007</td>
<td>Central Campus</td>
<td>Central Campus Electrical Upgrades Phase 1</td>
<td>$1,718,503</td>
<td>5/7/2019</td>
</tr>
<tr>
<td>N/A</td>
<td>201924023</td>
<td>Sullivan and Tucker Residence Halls</td>
<td>Roof Recoating</td>
<td>$177,858</td>
<td>4/18/2019</td>
</tr>
<tr>
<td>41524/337</td>
<td>201720046</td>
<td>Partners III</td>
<td>Carbon Electronics Cluster Lab Renovation</td>
<td>$2,014,408</td>
<td>5/2/2019</td>
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<tr>
<td>41724/309</td>
<td>201720056</td>
<td>Avent Ferry Technology</td>
<td>Network Lab Renovation and Expansion</td>
<td>$458,301</td>
<td>2/20/2019</td>
</tr>
<tr>
<td>41524/314</td>
<td>201620013</td>
<td>Centennial Campus</td>
<td>CC Utility Infrastructure- Medium Voltage Electrical Package</td>
<td>$1,500,000</td>
<td>6/25/2019</td>
</tr>
<tr>
<td>41624/318</td>
<td>201620029</td>
<td>Greek Village</td>
<td>Greek Village Infrastructure Phase III</td>
<td>$5,200,000</td>
<td>8/14/2019</td>
</tr>
</tbody>
</table>

**TOTAL** $25,523,386
Purpose:

The UNC Board of Governor's delegated authority to approve and administer non-appropriated capital improvement projects funded entirely with non-General Fund money that are projected to be less than $750,000. The procedure will be reviewed annually with any changes ratified by the full committee.

Step 1 – Project Identification

The initial step in capital project development is to define the project intent, scope, and budget. Facilities staff, in concert with the using Unit, accomplish this. Preliminary project approval is required from the Vice Chancellor for Finance and Administration.

Step 2 – Approval

Projects are presented to the Trustees Buildings and Property Committee (BPC) for consideration. It is within the authority of the BPC to approve or reject the proposed projects. This step may be accomplished by e-mail and then ratified at the next BPC meeting if necessary. The Full Board of Trustees are notified of the BPC’s action at their next scheduled meeting.

Step 3 – Submission

The Vice Chancellor for Finance and Administration will submit approved projects to the UNC System Office to initiate the project.
### Approval of Non-Appropriated Capital Improvement Projects less than $750,000

#### 5.8.A.2

**September 12, 2019 BOT Meeting Authority Requests**

<table>
<thead>
<tr>
<th>Project Title</th>
<th>Total Project Cost ($)</th>
<th>Previous Authorization ($)</th>
<th>Requested Authorization ($)</th>
<th>Authorization Type</th>
<th>Funding Source</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Equipment Storage Facility at Lake Wheeler</td>
<td>$400,000</td>
<td>-</td>
<td>$400,000</td>
<td>Full</td>
<td>Compensation from DOT for I-440 Widening Project</td>
<td>This project constructs a new 3,800 GSF facility at the Lake Wheeler Field Lab to accommodate agricultural equipment. 800 GSF will be conditioned space. The existing building housing the equipment will be demolished with the NCDOT I-440 Widening Project.</td>
</tr>
<tr>
<td>2. Flooring Renovation – Carroll Residence Hall</td>
<td>$450,000</td>
<td>-</td>
<td>$450,000</td>
<td>Full</td>
<td>Housing Receipts</td>
<td>This project abates and removes asbestos composite material (ACM) flooring. New vinyl composite tile and base will be installed on approximately 40,000 SF of Carroll Residence Hall.</td>
</tr>
<tr>
<td>3. Rifle Training Facility</td>
<td>$450,000</td>
<td>-</td>
<td>$450,000</td>
<td>Full</td>
<td>Athletics Receipts</td>
<td>This project renovates warehouse and office space to accommodate the NC State Athletic Rifle Team. The space will be used for training and athletic team offices. Renovations will include building system upgrades, HVAC system replacement, and ADA accommodations.</td>
</tr>
<tr>
<td>4. Water Line Modifications at Ligon Street Bridge</td>
<td>$550,000</td>
<td>-</td>
<td>$550,000</td>
<td>Full</td>
<td>Compensation from DOT for I-440 Widening Project</td>
<td>This project installs two water lines that need to be relocated due to the I-440 Widening Project. The water lines serve the West Research Annex buildings and the Method Road Headhouses and Greenhouses. New meters, taps, and backflow preventers will be installed.</td>
</tr>
<tr>
<td>5. Roof Replacement – Partners II</td>
<td>$700,000</td>
<td>-</td>
<td>$700,000</td>
<td>Full</td>
<td>Centennial Campus Trust Funds</td>
<td>This project replaces the twenty-year-old roof of Partners II Building. The three-story 67,760 GSF building is experiencing multiple leak issues and needs a full roof replacement.</td>
</tr>
</tbody>
</table>
### Approval of Plans and Specifications of Formal Projects

#### $2M or Less

**Note:** The projects below are submitted to the Board of Trustees Buildings and Property Committee for formal acceptance of plans and specifications. This listing represents projects received since the April 18, 2019 meeting.

<table>
<thead>
<tr>
<th>Project</th>
<th>Construction Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biomanufacturing Training and Education Center</td>
<td>$ 407,500</td>
</tr>
</tbody>
</table>
| Project 201820098  
BAS Upgrade  
Designer: Dewberry Engineers Inc.  
Raleigh, NC  
Fund Source: Repairs and Renovations |                        |
| Dabney Hall  
Project # 201820129  
Water Intrusion  
Designer: CLH Design PA  
Cary, NC  
Fund Source: Repairs and Renovations | $ 400,000              |
| Erdahl-Cloyd Wing  
Project # 201720149  
Elevator Renovation  
Designer: The Wooten Company  
Raleigh, NC  
Fund Source: Repairs and Renovations | $ 325,300              |
| Varsity Research Building  
Project # 201924050  
Roof Replacement  
Designer: REI Engineers  
Raleigh, NC  
Fund Source: Repairs and Renovations | $ 305,256              |
| Polk Hall  
Project # 201820102  
3rd Floor Lab Renovations  
Designer: BHDP Architecture  
Raleigh, NC  
Fund Source: Repairs and Renovations | $ 300,000              |
| DH Hill Library  
Project # 201720051  
Traction Elevator #3 Modernization  
Designer: The Wooten Company  
Raleigh, NC  
Fund Source: Repairs and Renovations | $ 259,000              |
### Approval of Plans and Specifications of Formal Projects
#### $2M or Less

<table>
<thead>
<tr>
<th>Building</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAS Hall</td>
<td>$247,477</td>
</tr>
<tr>
<td>Project # 201935008</td>
<td></td>
</tr>
<tr>
<td>Renovations to 1216 &amp; 1107</td>
<td></td>
</tr>
<tr>
<td>Designer: Davis Kane Architects PA</td>
<td>Raleigh, NC</td>
</tr>
<tr>
<td>Fund Source: Statistics Appropriated Funding</td>
<td></td>
</tr>
</tbody>
</table>

| Patterson Hall       | $226,000 |
| Project # 201920004  |          |
| Restroom Renovations |          |
| Designer: IBI Group of NC | Raleigh, NC |
| Fund Source: CALS Trust funds | |

| Burlington Laboratory | $220,541 |
| Project # 201820090  |          |
| Rooftop HVAC Unit Replacement |      |
| Designer: Edmondson Engineers | Durham, NC |
| Fund Source: College of Engineering Appropriated Funds | |

| Poe Hall              | $218,330 |
| Project # 201820091  |          |
| Suite 528 Renovations |          |
| Designer: Oakley Collier Architects, PA | Rocky Mount, NC |
| Fund Source: College of Education Appropriated Funds | |

| Talley Student Union  | $196,800 |
| Project # 201820120  |          |
| Starbucks Upgrades   |          |
| Designer: New City Design Group | Raleigh, NC |
| Fund Source: Dining Trust Funds | |

| Case Academic Center  | $192,000 |
| Project # 201824166  |          |
| Short-term Mechanical Room Repairs |      |
| Designer: Edmondson Engineers | Durham, NC |
| Fund Source: Dining Trust Funds | |

| Clark Hall           | $190,750 |
| Project # 201720147  |          |
| Connect to CHW Loop   |          |
| Designer: Optima Engineering, PA | Raleigh, NC |
| Fund Source: Repairs and Renovations | |
5.9.A.1

Approval of Plans and Specifications of Formal Projects
$2M or Less

Fountain Dining Hall  $ 184,774
Project # 201935001
Serving Area Renovation
Designer: McGahey Design PA
Garner, NC
Fund Source: Dining Trust Funds

Nelson Hall  $ 156,700
Project # 201920002
Boardroom 3220 Renovation
Designer: Andre Johnson Architect
Raleigh, NC
Fund Source: College of Management Appropriated Funds

Weisiger-Brown Athletic Center  $ 144,000
Project # 201935006
Chiller and Chilled Water Pump Replacement
Designer: Stanford White
Raleigh, NC
Fund Source: Athletics Trust Funds

Tower Hall – Wolf Ridge  $ 134,801
Project # 201920005
Fall Protection
Designer: Atlas Engineering
Raleigh, NC
Fund Source: Housing Trust Funds

Harris Hall  $ 116,584
Project # 201935017
Renovation of Cashier Counter
Designer: Davis Kane Architects PA
Raleigh, NC
Fund Source: Finance Division Trust Funds

Schaub Food Science Building  $ 103,936
Project # 201824137
Floor Waterproofing
Designer: Atlas Engineering
Raleigh, NC
Fund Source: Repairs and Renovations
# Capital Projects at a Glance
## as of July 31, 2019

### NORTH CAROLINA STATE UNIVERSITY

<table>
<thead>
<tr>
<th>Code/Item</th>
<th>Project Name</th>
<th>Bid</th>
<th>Expected Acceptance</th>
<th>Total Project Budget</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>41624 312</td>
<td>Bureau of Mines Renovation</td>
<td>Design</td>
<td>8/2/19</td>
<td>6/30/20</td>
<td>$6M</td>
</tr>
<tr>
<td>41824 330</td>
<td>Central Campus Electrical Upgrade Phase 2 - Distribution</td>
<td>Design</td>
<td>9/13/19</td>
<td>4/25/20</td>
<td>$6.2M</td>
</tr>
<tr>
<td>41824 316</td>
<td>Power to VRB</td>
<td>Design</td>
<td>1/7/20</td>
<td>8/15/20</td>
<td>$1.5M</td>
</tr>
<tr>
<td>41724 313</td>
<td>Restoration of Memorial Belltower</td>
<td>Design</td>
<td>1/18/20</td>
<td>2/28/21</td>
<td>$6.5M</td>
</tr>
<tr>
<td>41824 317</td>
<td>Structural Repairs Mann Hall</td>
<td>Design</td>
<td>2/2/20</td>
<td>2/15/21</td>
<td>$2M</td>
</tr>
<tr>
<td>41824 311</td>
<td>Elevator Additions - Tucker &amp; Owen Residence Halls</td>
<td>Design</td>
<td>3/30/20</td>
<td>8/18/20</td>
<td>$1.4M</td>
</tr>
<tr>
<td>41824-337</td>
<td>Wrestling Addition &amp; Renovation</td>
<td>Design</td>
<td>4/25/20</td>
<td>5/1/21</td>
<td>$2.5M</td>
</tr>
<tr>
<td>41824 331</td>
<td>Fire Alarm Replacement Brooks &amp; Bostian</td>
<td>Design</td>
<td>4/27/20</td>
<td>12/30/20</td>
<td>$640K</td>
</tr>
<tr>
<td>41824 334</td>
<td>Library Renovations Jordan Hall</td>
<td>Design</td>
<td>4/27/20</td>
<td>3/4/21</td>
<td>$1.5M</td>
</tr>
<tr>
<td>41824 327</td>
<td>Thermal Utilities to P2 and Toxicology Buildings</td>
<td>Design</td>
<td>7/13/20</td>
<td>3/21/21</td>
<td>$7M</td>
</tr>
<tr>
<td>41824 333</td>
<td>Lab &amp; Building Systems Modifications VRB</td>
<td>Design</td>
<td>7/23/20</td>
<td>3/31/21</td>
<td>$1.5M</td>
</tr>
<tr>
<td>41824 310</td>
<td>Interior Renovations Erdahl-Cloyd</td>
<td>Design</td>
<td>6/28/20</td>
<td>12/1/19</td>
<td>$1.5M</td>
</tr>
<tr>
<td>41824 312</td>
<td>Outdoor Aquatics Facility</td>
<td>Design</td>
<td>8/18/20</td>
<td>5/14/21</td>
<td>$11M</td>
</tr>
<tr>
<td>41824 318</td>
<td>Dairy Facility at CVM</td>
<td>Design</td>
<td>1/10/21</td>
<td>3/12/22</td>
<td>$4.8M</td>
</tr>
<tr>
<td>41724 310</td>
<td>Price Music HVAC Renovations</td>
<td>Construction</td>
<td>7/31/19</td>
<td>$975K</td>
<td>97 % Construction Complete</td>
</tr>
<tr>
<td>41524 336</td>
<td>Reedy Creek Equine Farm</td>
<td>Construction</td>
<td>8/9/19</td>
<td>$3.0M</td>
<td>99% Construction Complete</td>
</tr>
<tr>
<td>41424 310</td>
<td>CBC Chiller Plant Expansion</td>
<td>Construction</td>
<td>8/9/19</td>
<td>$4.98M</td>
<td>99% Construction Complete</td>
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<tr>
<td>41524 340</td>
<td>Dearstyne Entomology and Avian HVAC Upgrades</td>
<td>Construction</td>
<td>8/9/19</td>
<td>$1.5M</td>
<td>99% Construction Complete</td>
</tr>
<tr>
<td>41624 318</td>
<td>Greek Village Phase 3 Infrastructure</td>
<td>Construction</td>
<td>8/16/19</td>
<td>$5.5M</td>
<td>95% Construction Complete</td>
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<tr>
<td>41624 331</td>
<td>B104 Lab Renovation, CVM Main Building</td>
<td>Construction</td>
<td>8/23/19</td>
<td>$2.0M</td>
<td>80% Construction Complete</td>
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<tr>
<td>41724 311</td>
<td>ES King Village Roof Replacements - Ph 3</td>
<td>Construction</td>
<td>8/26/19</td>
<td>$2.0M</td>
<td>90% Construction Complete</td>
</tr>
<tr>
<td>41324 357</td>
<td>North &amp; Central Electrical Distribution - Phase 1</td>
<td>Construction</td>
<td>8/30/19</td>
<td>$4.1M</td>
<td>96% Construction Complete</td>
</tr>
<tr>
<td>41724 305</td>
<td>Rigging Replacement Stewart Theatre</td>
<td>Construction</td>
<td>9/13/19</td>
<td>$1.1M</td>
<td>30% Construction Complete</td>
</tr>
<tr>
<td>41524 310</td>
<td>Exterior Lighting LED Conversion</td>
<td>Construction</td>
<td>9/27/19</td>
<td>$2.2M</td>
<td>15% Construction Complete</td>
</tr>
<tr>
<td>41224 352</td>
<td>Centennial Campus Substation Expansion-Phase 1 &amp; 2</td>
<td>Construction</td>
<td>9/30/19</td>
<td>$7.3M</td>
<td>93% Construction Complete</td>
</tr>
<tr>
<td>41524 338</td>
<td>Dabney Hall HVAC and METRIC</td>
<td>Construction</td>
<td>10/1/19</td>
<td>$4.5M</td>
<td>65% Construction Complete</td>
</tr>
<tr>
<td>41724 317</td>
<td>Fuel Oil Tank Expansion</td>
<td>Construction</td>
<td>10/11/19</td>
<td>$625K</td>
<td>27% Construction Complete</td>
</tr>
<tr>
<td>41724 308</td>
<td>Creamery Café &amp; Education Center</td>
<td>Construction</td>
<td>11/29/19</td>
<td>$1.2M</td>
<td>25% Construction Complete</td>
</tr>
<tr>
<td>41524 314</td>
<td>Centennial Campus Utility Infrastructure (TES)</td>
<td>Construction</td>
<td>3/30/20</td>
<td>$9.6M</td>
<td>58% Construction Complete</td>
</tr>
<tr>
<td>41624 311</td>
<td>DH Hill Academic Success Center</td>
<td>Construction</td>
<td>6/2/20</td>
<td>$15.9M</td>
<td>4% Construction Complete</td>
</tr>
<tr>
<td>41524 313</td>
<td>Fitts-Woolard Hall (Engineering Building Oval)</td>
<td>Construction</td>
<td>6/30/20</td>
<td>$137M</td>
<td>56% Construction Complete</td>
</tr>
<tr>
<td>41624 302</td>
<td>Carmichael Renovation &amp; Expansion</td>
<td>Construction</td>
<td>7/31/20</td>
<td>$45M</td>
<td>28% Construction Complete</td>
</tr>
<tr>
<td>41724 316</td>
<td>Steam Repairs Phase 8C - North/South tunnel</td>
<td>Construction</td>
<td>8/24/20</td>
<td>$1.8M</td>
<td>58% Construction Complete</td>
</tr>
<tr>
<td>41524 314</td>
<td>Plant Sciences Building</td>
<td>Construction</td>
<td>2/4/22</td>
<td>$150M</td>
<td>10% Construction Complete</td>
</tr>
<tr>
<td>41624 339</td>
<td>DH Hill &amp; Poe Waterproofing</td>
<td>Complete</td>
<td>7/1/19</td>
<td>725K</td>
<td>Accepted 7/23/19</td>
</tr>
<tr>
<td>41624-316</td>
<td>Murphy Center Sports Medicine</td>
<td>Complete</td>
<td>7/10/19</td>
<td>$1.9M</td>
<td>Accepted 7/30/19</td>
</tr>
<tr>
<td>Upcoming Projects</td>
<td></td>
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<td>Student Housing Master Plan</td>
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<td>Wrestling Addition and Renovation</td>
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<td>CVM Teaching Animal Unit Dairy Facility</td>
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<table>
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<tr>
<th>Approved Projects</th>
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<td>Sigma Phi Epsilon House</td>
<td>$3,000,000</td>
<td>Hager Smith</td>
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<td>Lambda Chi House</td>
<td>$4,600,000</td>
<td>Carl Winstead, AIA</td>
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<td>Fitts-Woolard Hall (Engineering Building Oval)</td>
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<td>Carmichael Gym Addition &amp; Renovation</td>
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<td>CRA Associates, Inc.</td>
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<td>Kappa Alpha Theta House</td>
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<td>Sigma Kappa House</td>
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<td>CJMW Architecture</td>
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<tr>
<td>Zeta Tau Alpha House</td>
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<td>Hug &amp; Associates Architects</td>
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<td>Alpha Delta Pi House</td>
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<td>Lake Wheeler Road Creamery</td>
<td>$1,248,870</td>
<td>Muter Construction (w/ Louis Cherry Architecture)</td>
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<td>Belflower Restoration</td>
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<td>New Atlantic Contracting w/ Walter Robbs Architecture</td>
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<td>Global Courtyard at Primrose Hall</td>
<td>$380,000</td>
<td>In-house design (College of Design and Facilities Division)</td>
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<td>Academic Success Center</td>
<td>$14,234,213</td>
<td>Lord Aeck Sargent</td>
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<tr>
<td>Bureau of Mines Renovation</td>
<td>$6,000,000</td>
<td>Cleescapes Architecture + Art</td>
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</table>
CALL TO ORDER
Chip Andrews, Chair of Committee

ROLL CALL
Chip Andrews, Chair of Committee

READING OF STATE GOVERNMENT ETHICS ACT CONFLICT OF INTEREST STATEMENT
Chip Andrews, Chair of Committee

1. CONSENT AGENDA
Approval of July 10, 2019 Minutes

2. ACTION ITEMS
A. Review Committee Responsibilities
B. Review Plan of Work

3. INFORMATIONAL REPORTS
A. University Advancement Update
   Brian Sischo, Vice Chancellor, University Advancement
B. Fundraising and Campaign Report
   Jim Broschart, Associate Vice Chancellor, University Development
C. Alumni Association Update
   Benny Suggs, Associate Vice Chancellor, Alumni Relations, and Executive Director, NC State Alumni Association
4. COMMITTEE DISCUSSION

A. Strategic Brand Management Discussion
   Brad Bohlander, Associate Vice Chancellor, University Communications and Marketing and Chief Communications Officer

B. Watauga Medal Nominations Process
   Brian Sischo, Vice Chancellor, University Advancement

C. Naming Opportunity Proposals
   Jim Broschart, Associate Vice Chancellor, University Development

5. CLOSED SESSION

A. Approval of July 10, 2019 Closed Session Minutes *

B. Request Approval for Naming Specific University Facilities and Programs

ADJOURN

* Committee Approval
✓ Full Board Approval
CONSENT AGENDA

Approval of July 10, 2019 Minutes
The University Advancement Committee of the Board of Trustees of North Carolina State University met in Open Session at 3:52 p.m in the Chancellor’s Conference Room in Holladay Hall.

Chair Kelly called the session to order and read the State of North Carolina’s Government Ethics Act. The Chair asked Vice Chancellor Brian Sischo to present a requested action which proposed a revision to the Watauga Medal policy 01.30.03 that would further clarify the nomination process and allow the Watauga Medal Selection Committee to provide up to five nominees for consideration by the Chancellor rather than three. The Committee approved the revision and offered suggestions about ways to increase the nominee pool. The Committee then requested the opportunity to review the Watauga Medal selection process in more detail at the September meeting.

Vice Chancellor Sischo continued with a University Advancement update. Year-end fundraising results reflect $220 million in new gifts and commitments, reflecting the second highest fundraising total in our university’s history. The Think and Do the Extraordinary Campaign ended the fiscal year at $1.53 billion, positioning the university within $70 million of its campaign goal with 2.5 years remaining in the campaign. Due to strong fundraising and sound financial management, NC State’s endowment has seen growth of 158% since 2010 and has now surpassed $1.4 billion, placing it among the top 100 largest higher education endowments in the country. Brian provided an update that we are halfway through a mid-campaign feasibility study, which will yield recommendations regarding the campaign goal.

Brian then provided key staffing changes including Griffin Lamb who started May 1st as Assistant Dean for Advancement in Engineering. Carrie Bhada, Executive Director for Development at Wilson College of Textiles, appointed as Assistant Vice Chancellor for Development in University Development. Lastly, Anya Reid is departing the Poole College of Management and NC State after more than eight years to become the Assistant Vice President for Advancement at Emory University in Atlanta.

Brian shared that Associate Vice Chancellor Brad Bohlander is developing an Office of Strategic Brand Management within University Communications and Marketing. This will position us to maximize relationships with existing and future partners to elevate our brand.

Brian then presented five naming opportunities totaling $760,000 for the Dairy Education Center & Creamery at Lake Wheeler Road. The Committee approved the opportunities then made a motion to go into closed session, where six donor naming proposals (four from CALS, one from Engineering and one from Veterinary Medicine) were put forth and all were approved. A motion was then made to return to open session and with no additional business, the meeting adjourned at 4:25 p.m.

Respectfully submitted,

Stan Kelly
Chair
ACTION ITEMS

Review Committee Responsibilities

Review Plan of Work
October

- Fund Raising Reports (NC State Pol. 01.05.01, App IV.a) Provide periodic updates
- Fund Raising Naming Plans (NC State Pol. 01.05.01, App IV.a.i.,a.iii) (Approval)
- Campaign Update (NC State Pol. 01.05.01, App IV.a.iii)
- Advancement Services Update
- Watauga Medal Nominations (NC State Pol. 01.05.01, App IV.a.vi) (Approval)
- Naming Specific University Facilities and Programs (NC State Pol. 01.05.01, App IV.a.iv) (Approval)

November

- Fund Raising Reports (NC State Pol. 01.05.01, App IV.a) Provide periodic updates
- Fund Raising Naming Plans (NC State Pol. 01.05.01, App IV.a.i.,a.iii) (Approval)
- Campaign Update (NC State Pol. 01.05.01, App IV.a.iii)
- Watauga Medal Nominations (NC State Pol. 01.05.01, App IV.a.vi) (Approval)
- Naming Specific University Facilities and Programs (NC State Pol. 01.05.01, App IV.a.iv) (Approval)

December

- Fund Raising Reports (NC State Pol. 01.05.01, App IV.a) Provide periodic updates
- Fund Raising Naming Plans (NC State Pol. 01.05.01, App IV.a.i.,a.iii) (Approval)
- Campaign Update (NC State Pol. 01.05.01, App IV.a.iii)
- Watauga Medal Nominations (NC State Pol. 01.05.01, App IV.a.vi) (Approval)
- Naming Specific University Facilities and Programs (NC State Pol. 01.05.01, App IV.a.iv) (Approval)

February

- Fund Raising Reports (NC State Pol. 01.05.01, App IV.a) Provide periodic updates
- Fund Raising Naming Plans (NC State Pol. 01.05.01, App IV.a.i.,a.iii) (Approval)
- Campaign Update (NC State Pol. 01.05.01, App IV.a.iii)
- Naming Specific University Facilities and Programs (NC State Pol. 01.05.01, App IV.a.iv) (Review all proposals to name facilities or programs as recommended by the Special Donor and Honorary Committees) (Approval)

March

- Fund Raising Reports (NC State Pol. 01.05.01, App IV.a) Provide periodic updates
- Fund Raising Naming Plans (NC State Pol. 01.05.01, App IV.a.i.,a.iii) (Approval)
- Campaign Update (NC State Pol. 01.05.01, App IV.a.iii)
- Naming Specific University Facilities and Programs (NC State Pol. 01.05.01, App IV.a.iv) (Review all proposals to name facilities or programs as recommended by the Special Donor and Honorary Committees) (Approval)

April

- Fund Raising Reports (NC State Pol. 01.05.01, App IV.a) Provide periodic updates
- Fund Raising Naming Plans (NC State Pol. 01.05.01, App IV.a.i.,a.iii) (Approval)
- Campaign Update (NC State Pol. 01.05.01, App IV.a.iii)
- External Affairs Update (NC State Pol. 01.05.01, App IV.b.iii)
- Naming Specific University Facilities and Programs (NC State Pol. 01.05.01, App IV.a.iv) (Review all proposals to name facilities or programs as recommended by the Special Donor and Honorary Committees) (Approval)
INFORMATIONAL REPORTS

University Advancement Update
Fundraising and Campaign Report
Alumni Association Update
FY20 Development Activity Reports

July 31, 2019
### University Advancement - Institutional Reports
#### Monthly Gift Receipts by Use

**Report Date:** July 31, 2019

<table>
<thead>
<tr>
<th>Category</th>
<th>Current Operations</th>
<th>Endowment</th>
<th>Facilities</th>
<th>Year-to-date FY '20 Totals</th>
<th>Year-to-date FY '19 Totals</th>
<th>3 year Average (FY17 - FY19)</th>
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<tbody>
<tr>
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<td>$10,050</td>
<td>$1,804,210</td>
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<td>$111,610</td>
<td>$0</td>
<td>$111,610</td>
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<td><strong>$9,378,334</strong></td>
<td><strong>$14,776,043</strong></td>
<td><strong>$12,802,508</strong></td>
</tr>
</tbody>
</table>

* Includes gift information provided by the North Carolina Textiles Foundation
** Includes gift information provided by the NCSU Student Aid Association

**Reporting Period:** July 1 - July 31, 2019

**Data Refresh:** Wednesday, August 7, 2019
### University Advancement - Institutional Reports
#### Monthly Gift Receipts by Source

**Report Date: July 31, 2019**

<table>
<thead>
<tr>
<th>Category</th>
<th>Alumni</th>
<th>Parents</th>
<th>Faculty Staff</th>
<th>Other Individuals</th>
<th>Corporations</th>
<th>Foundations</th>
<th>Other Organizations</th>
<th>Year-to-date FY '20 Totals</th>
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</tbody>
</table>

*Includes gift information provided by the North Carolina Textiles Foundation

**Includes gift information provided by the NCSU Student Aid Association
<table>
<thead>
<tr>
<th></th>
<th>Cash Gifts</th>
<th>Gifts-In-Kind</th>
<th>Matching Gifts</th>
<th>PG Life Income</th>
<th>Realized Bequests</th>
<th>Non-Governmental Grants</th>
<th>Year-to-date FY ’20 Totals</th>
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<tr>
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<td>$0</td>
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<td><strong>$79,047</strong></td>
<td><strong>$1,489,440</strong></td>
<td><strong>$9,378,334</strong></td>
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</table>

* Includes gift information provided by the North Carolina Textiles Foundation

** Includes gift information provided by the NCSU Student Aid Association

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Reporting Period: July 1 - July 31, 2019

Data Refresh: Wednesday, August 7, 2019
## University Advancement - Institutional Reports
### Monthly Gifts and New Commitments by Use

**Report Date: July 31, 2019**

<table>
<thead>
<tr>
<th>Category</th>
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<th>Endowment</th>
<th>Facilities</th>
<th>Year-to-date FY '20 Totals</th>
<th>Year-to-date FY '19 Totals</th>
<th>3 year Average (FY17 - FY19)</th>
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<td>$0</td>
<td>$131,139</td>
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<td>$204,553</td>
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<td><strong>$8,746,601</strong></td>
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</table>

* Includes gift information provided by the North Carolina Textiles Foundation

** Includes gift information provided by the NCSU Student Aid Association

** Reporting Period: July 1 - July 31, 2019

** Data Refresh: Wednesday, August 7, 2019
# University Advancement - Institutional Reports
## Monthly Gifts and New Commitments by Source

**Report Date:** July 31, 2019

<table>
<thead>
<tr>
<th>Source</th>
<th>Alumni</th>
<th>Parents</th>
<th>Faculty Staff</th>
<th>Other Individuals</th>
<th>Corporations</th>
<th>Foundations</th>
<th>Other Organizations</th>
<th>Year-to-date FY '20 Totals</th>
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<tbody>
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</table>

* Includes gift information provided by the North Carolina Textiles Foundation
** Includes gift information provided by the NCSU Student Aid Association

Reporting Period: July 1 - July 31, 2019
Data Refresh: Wednesday, August 7, 2019
<table>
<thead>
<tr>
<th>Category</th>
<th>Cash Gifts</th>
<th>Gifts-In-Kind</th>
<th>Matching Gifts</th>
<th>PG Life Income</th>
<th>Realized Bequests</th>
<th>Bequest Expectancies</th>
<th>Pledges</th>
<th>Non-Governmental Grants</th>
<th>Year-to-date FY '20 Totals</th>
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<tr>
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</table>

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** Includes gift information provided by the NCSU Student Aid Association

Report Date: July 31, 2019

Reporting Period: July 1 - July 31, 2019

Data Refresh: Wednesday, August 7, 2019
Report Date: July 31, 2019

<table>
<thead>
<tr>
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<th>Reachback Phase</th>
<th>Nucleus Phase</th>
<th>Public Phase</th>
<th>Campaign Total</th>
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</tbody>
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** Includes gift information provided by the NCSU Student Aid Association

Data Refresh: Wednesday, August 7, 2019
## University Advancement - Institutional Reports
### Monthly Campaign Commitments by Source

**Report Date:** July 31, 2019

<table>
<thead>
<tr>
<th>Source</th>
<th>Alumni</th>
<th>Parents</th>
<th>Faculty Staff</th>
<th>Other Individuals</th>
<th>Corporations</th>
<th>Foundations</th>
<th>Other Organizations</th>
<th>Campaign Total</th>
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</tbody>
</table>

* Includes gift information provided by the North Carolina Textiles Foundation
** Includes gift information provided by the NCSU Student Aid Association

Data Refresh: Wednesday, August 7, 2019
## University Advancement - Institutional Reports
### Monthly Campaign Commitments by Type

<table>
<thead>
<tr>
<th>Category</th>
<th>Cash Gifts</th>
<th>Gifts-In-Kind</th>
<th>Matching Gifts</th>
<th>PG Life Income</th>
<th>Realized Bequests</th>
<th>Bequest Expectancies</th>
<th>Pledges</th>
<th>Non-Governmental Grants</th>
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</tbody>
</table>

* Includes gift information provided by the North Carolina Textiles Foundation
** Includes gift information provided by the NCSU Student Aid Association

Data Refresh: Wednesday, August 7, 2019
## University Advancement - Institutional Reports
### Monthly Campaign Commitments by Use

**Report Date:** July 31, 2019

<table>
<thead>
<tr>
<th>Category</th>
<th>Current Operations</th>
<th>Endowment</th>
<th>Facilities</th>
<th>Campaign Total</th>
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<td>University-wide</td>
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<td>$748,895,382</td>
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</table>

* Includes gift information provided by the North Carolina Textiles Foundation
** Includes gift information provided by the NCSU Student Aid Association

**Data Refresh:** Wednesday, August 7, 2019
NC State Alumni Association
BOT Briefing

Benny Suggs ’69
RADM USN (ret)
Associate Vice Chancellor – Alumni Relations
Executive Director – NC State University Alumni Association
• Strategic approach to measuring engagement by building a scoring model
• Grow social media
• Four segmented campaigns to grow membership and raise awareness
• Generate in excess of 1.3 in revenue
• Utilize videographer to capture compelling visuals
• Grow regional engagement of alumni networks
• Continued growth in BAS activity
• Continued growth of Forever Club activity
COMMITTEE DISCUSSION

Strategic Brand Management

Watauga Medal Nominations Process

Naming Opportunity Proposals
Overview
NC State is widely recognized as a leading national research university with a brand that conveys action, impact and excellence. While NC State has built its reputation on generations of delivering economic, societal and intellectual prosperity, only within the last few years has the university focused on identifying, protecting and advancing its brand for the overall benefit of the institution.

NC State’s brand is a strategic asset that has tangible value. It has proven effective in helping to improve rankings, attract the brightest students and best faculty, raise money, enhance employee and alumni pride, and encourage community support. NC State’s brand also helps attract and secure mutually beneficial partnerships, sponsorships and licensing agreements with private-sector businesses that desire to be associated with the university.

NC State’s brand momentum and impact are just beginning to take hold. At this unique point in time, NC State is seizing the opportunity to establish the **Office of Strategic Brand Management** to capitalize on its strong and rising brand awareness to help the university accomplish its goals and achieve its potential.

The Office
The **Office of Strategic Brand Management** at NC State will strive to elevate brand awareness and affinity, facilitate investment from businesses, enhance university partnerships, and improve external revenue support. This office, reporting to NC State’s Chief Communications and Marketing Officer (who has responsibility to manage and advance the university’s brand), will consist of several previously dispersed and overlapping responsibilities, including: *university brand management and protection; management of logos, trademarks and licensing; and managing commercial university sponsorships with outside business partners*, among other duties.

A focused team supported by the larger University Communications and Marketing department, and in collaboration with a structured committee that includes staff from Athletics, General Counsel, the Budget Office, Purchasing, Campus Enterprises, Partnership Office, and Foundation and Corporate Relations (along with others as appropriate), will strategically enhance NC State’s ability to effectively promote and protect the university’s brand in service of a broad range of institutional interests.

NC State’s Strategic Brand Management team will provide leadership and guidance in managing existing university business sponsorship relationships, developing new business relationships, internal and external brand management, and trademark management and licensing. The Strategic Brand Management team will also be responsible for managing approved use of any NC State logo, image or copy used by or in conjunction with any university business, nonprofit or agency partner.

Awareness of NC State’s excellence continues to rise and there are many potential business partners who are interested in aligning themselves with NC State’s momentum. The Office of Strategic Brand Management will not only improve brand alignment internally, it will enable NC State to ensure strong sponsorship, licensing and other brand-related relationships with well-aligned partners that advance our shared mission to serve our campus community, North Carolina, the nation and the world.
Rationale: Clarifying the nomination, recommendation, and approval process for Watauga Medal recipients.

Previous language:

4.1 The Board of Trustees shall select up to three Watauga Medal recipients annually. The Board will make its selections from nominations submitted to and recommended by the North Carolina State University Watauga Medal Nomination Committee (the “Committee”). The Committee will forward its recommendations to the Chancellor for submission to the University Advancement Committee of the Board.

Replacement language:

4.1 The Board of Trustees shall select up to three (3) Watauga Medal recipients annually. The North Carolina State University Watauga Medal Nomination Committee will receive nominations and forward up to five (5) recommendations to the Chancellor. Upon the Chancellor’s recommendation, the University Advancement Committee will review and recommend Watauga Medal recipients to the Board of Trustees.
August 13, 2019

MEMORANDUM

TO: W. Randolph Woodson, Chancellor

FROM: Brian C. Sischo, Vice Chancellor, University Advancement

SUBJECT: Naming Opportunities Proposals

The Naming Opportunities Committee has endorsed and favorably recommends to you the following proposals:

**College of Agriculture and Life Sciences**

**Peanut Breeding Program**
The College of Agriculture and Life Sciences proposes an opportunity to name the Peanut Breeding Program.

**Certified SweetPotato Greenhouses**
The College of Agriculture and Life Sciences proposes opportunities to name the Certified SweetPotato Greenhouses complex of four buildings or to name the individual greenhouses.
Background

As per POL 03.00.02 – Criteria and Procedures for Naming Facilities and Programs, the act of naming a facility or program shall be that of the Board of Trustees, acting after receiving the recommendation of the Chancellor.

Recommended Action

Chancellor W. Randolph Woodson recommends to the Board of Trustees the following fundraising projects for approval.

Overview

- **Total Naming Opportunities Proposals:** 2
- **Total Naming Opportunities:** 6
- **Total Gift Amount:** $4 million
- **Colleges/Units Represented:**
  - College of Agriculture and Life Sciences

College of Agriculture and Life Sciences

Peanut Breeding Program

*NC State’s peanut breeding program is among the top five U.S. programs and has been instrumental in the International Peanut Genome Initiative. The program provides essential research and support for the peanut producers of the Carolinas and Virginia.*

- **Naming Type:** Program
- **Total Naming Opportunities:** 1
- **Total Gift Amount of Naming Opportunities:** $3.2 million
- **Purpose of Funds:** The gift will be directed into an endowment to provide unrestricted support for the Peanut Breeding Program.

Certified SweetPotato Greenhouses

*This complex of four greenhouses, dedicated in May 2019, provides more than 10,000 square feet of growing space for sweetpotatoes.*

- **Naming Type:** New construction
- **Total Naming Opportunities:** 5
- **Total Gift Amount of Naming Opportunities:** $800,000
- **Purpose of Funds:** Gifts will support ongoing upgrades and maintenance of the greenhouses.
Board of Trustees Consent Agenda
University Advancement Committee
Naming Opportunities Proposals
September 12, 2019

Policy References
POL 03.00.02 – Criteria and Procedures for Naming Facilities and Programs
Proposals for Naming Opportunity Approval

Board of Trustees’ Meeting

September 12, 2019
College of Agriculture and Life Sciences

Peanut Breeding Program

- **Naming Type:** Program
- **Total Naming Opportunities:** 1
- **Total Gift Amount of Naming Opportunity:** $3.2 million
- **Fund Purpose:** Funds will be an unrestricted endowment to provide support for the program.
College of Agriculture and Life Sciences

Certified SweetPotato Greenhouses

- **Naming Type:** New Facility
- **Total Naming Opportunities:** 5
- **Total Gift Amount of Naming Opportunities:** $800,000
- **Timeline:** Dedicated May 2019
- **Fund Purpose:** Funds will support ongoing upgrades and maintenance of the greenhouses.
BOARD OF TRUSTEES
NORTH CAROLINA STATE UNIVERSITY
AGENDA

University Affairs Committee
1:15 p.m. – 3:00 p.m. September 12, 2019
Winslow Hall Conference Room

Stan Kelly, Chair
Members: Emma Carter, Jimmy Clark, Jim Harrell, Ven Poole, Ron Prestage

CALL TO ORDER
Stan Kelly, Chair

ROLL CALL
Stan Kelly, Chair

READING OF STATE GOVERNMENT ETHICS ACT CONFLICT OF INTEREST STATEMENT
Stan Kelly, Chair

1. RESPONSIBILITIES OF THE COMMITTEE

A. Review Committee Responsibilities as established in Bylaws
   Presenter: Warwick Arden, Executive Vice Chancellor and Provost

B. Review Draft Plan of Work for the 2019-2020 Year
   Presenters: Stan Kelly, Committee Chair
   Warwick Arden, Executive Vice Chancellor and Provost

2. CONSENT AGENDA

A. Approval of July 10, 2019 Minutes (open & closed session)
   7.2A
B. Requests to Continue Centers/Institutes
   a. Future Renewable Electric Energy Delivery and Management Systems Center (FREEDM)
   7.2B
C. Designation of Time Limited Option for Distinguished Professorships
   7.2C

3. REPORTS

A. Fall Enrollment Report
   Presenter: Louis Hunt, Senior Vice Provost, Enrollment Management & Services

B. Student Body President Report
   Presenter: Emma Carter, Student Body President

C. Faculty Senate Report
   Presenter: Hans Kellner, Chair of the Faculty

✓ Denotes full Board approval required
D. December 2019 Commencement Speaker (no materials)  
   *Presenter: Chancellor W. Randolph Woodson*

E. Provost Update (no materials)  
   *Presenter: Warwick Arden, Executive Vice Chancellor and Provost*  
   a. 2019-2020 Academic Year Initiatives

✔ 4. CLOSED SESSION

5. RECONVENE OPEN SESSION

6. ADJOURN

✔ Denotes full Board approval required
NC STATE UNIVERSITY

Board of Trustees - University Affairs Committee

Delegated Authority and Assignments
Based on Board of Trustees Bylaws - POL 01.05.01, Appendix 1, Section V

Academic Programs

Review and recommend academic degree proposals requiring BOG approval*
Receive notification of other academic program proposals (ex. certificates)

Student Affairs

Review and recommend campus initiated tuition increases and student fees

EHRA Personnel (Exempt from the State Human Resources Act)

Conferral of permanent tenure*
- New faculty hires tenured at a previous institution
- Faculty candidates reviewed through annual reappointment, promotion, and tenure process

Salary matters
- Establish salary ranges for SAAO employees that are not otherwise established by UNC-SO
- Recommend any salary increase for an EHRA employee, other than for Vice Chancellors, that requires approval by the Board of Governors

Non-salary compensation
- Approve non-salary compensation for all EHRA employees other than Vice Chancellors

Designation of particular Distinguished Professorships as time limited*

Conferral of Emeritus status to SAAO Tier I employees

Appoint or extend the contract of the Athletic Director and Head Coaches

Appointment of Deans

Review and recommend petitions relating to employees seeking political candidacy and/or public office holding

Administrative separation and retreat rights
- “Retreat rights” are those conditions of employment that would apply should the administrator leave his/her administrative position.
- Review and approve any administrative separation or retreat rights subject to BOT approval under UNC and NC State policies.

* These items go through comprehensive evaluation processes on campus prior to being brought to the board and are typically included on the committee’s consent agenda.
Employee Appeals
Hear appeals of discharged or suspended employees
Hear and render a decision on appeals from the disposition of grievances

Honorary Degrees, Awards and Distinctions
Honorary Degrees and Holladay Medals
- Receive and review nominations
- Recommend nominees to Board of Trustees for approval
Provide advice in Chancellor’s selection of a commencement speaker

Planning
Review and recommend changes in the university’s mission statement
Advise chancellor on development of plans to carry out the university’s mission
Review and approve establishment, continuation and discontinuation of Centers and Institutes*

Policy Development
Recommend to Board policies related to:
- Personnel
- Collection of tuition, fees and other monies from students
- Administration of scholarships and other financial aid to students
- Provision of student services activities, including government and intercollegiate athletics
- Research, Centers and Institutes

Reports
Hear reports from the Chair of Faculty, Chair of Staff Senate, and Student Body President

<table>
<thead>
<tr>
<th>Hans Kellner</th>
<th>Janice Sitzes</th>
<th>Emma Carter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chair, Faculty</td>
<td>Chair, Staff Senate</td>
<td>Student Body President</td>
</tr>
</tbody>
</table>

Other reports include:
- Enrollment
- Faculty retention
- Graduation statistics
- Intercollegiate athletics
- Residency for full scholarship undergraduate students
- Students requiring special consideration
- Strategic Plan

* These items go through comprehensive evaluation processes on campus prior to being brought to the board and are typically included on the committee’s consent agenda.
NC STATE BOARD OF TRUSTEES
UNIVERSITY AFFAIRS COMMITTEE
2019-2020 PLAN OF WORK (DRAFT)

September

- Centers and Institutes Requests (UNC Pol. 400.5 (R) (NC State Pol. 01.05.01 App. 1, V.f.iii) (as needed)
  *Review and approve the establishment, continuation and discontinuation of Centers and Institutes.*
- Committee Responsibilities and Plan of Work (Annually)
  *Review committee’s delegated authority and assignments and develop plan of work for the year.*
- Degree Program Proposals (NC State Pol. 01.05.01, App.1, V.c.i.) (as needed)
  *Review and recommend approval to the BOT.*
- Fall Enrollment Report / Progress Toward Enrollment Planning (NC State Pol. 01.05.01, App 1, V.f.ii)
  *Receive report and comment as warranted.*
- Honorary Degree Recommendations (UNC Pol. Ch. 100.1, Appendix 1 (IV) (NC State Pol 01.05.01, App.1, V.e.i)
  *Receive and review nominations as needed. Recommend nominees for approval to the BOT.*
- Personnel Requests (NC State Pol. 01.05.01, App 1.V.a.i.ii.iii.iv.v.vi.vii.viii.ix.b.i.ii)) (as needed)
  *Approve or recommend approval to the BOG.*
- Salary Ranges for Faculty (Annually) *If not shared at July meeting.*
  *The Chancellor has delegated authority for faculty salary ranges. Upon the Chancellor’s approval, these ranges are shared with the committee.*
- Student Body President Report (NC State Pol. 01.05.01 App.1, V.h.i.)
  *Receive report and comment as warranted.*

November

- Campus Initiated Tuition Increase and Student Fees (UNC Pol. 1000.11, II, 3.A. iii) (NC State Pol. 11.00.01 and 01.05.01, App. 1, V.d.i)  *Review and recommend approval to the BOT.*
- Centers and Institutes Requests (UNC Pol. 400.5 (R) (NC State Pol. 01.05.01 App. 1, V.f.iii) (as needed)
  *Review and approve the establishment, continuation and discontinuation of Centers and Institutes.*
- Commencement Speaker – December (NC State Pol. 01.05.01 App. 1, V.e.ii)
  *Provide advice in Chancellor’s selection of Commencement Speaker.*
- Degree Program Proposals (NC State Pol. 01.05.01, App.1, V.c.i) (as needed)
  *Review and recommend approval to the BOT.*
- Faculty Retention Report
  *Receive report and comment as warranted.*
NC STATE BOARD OF TRUSTEES
UNIVERSITY AFFAIRS COMMITTEE
2019-2020 PLAN OF WORK (DRAFT)

• Faculty Senate Report (NC State Pol. 01.05.01 App.1, V.h.i.)
  Receive report and comment as warranted.
• Honorary Degree Recommendations (UNC Pol. Ch. 100.1, Appendix 1 (IV) (NC State Pol. 01.05.01, App.1, V.e.i)
  Receive and review nominations as needed. Recommend nominees for approval to the BOT.
• Personnel Requests (NC State Pol. 01.05.01, App 1.V.a.i.ii.iii.iv.v.vi.vii.viii.ix.b.i.ii) (as needed)
  Approve or recommend approval to the BOG.
• Staff Senate Report (NC State Pol. 01.05.01 App.1, V.h.i.)
  Receive report and comment as warranted.

February
• Centers and Institutes Overview (Informational report provided every 2 years.)
  Receive report and comment as warranted.
• Centers and Institutes Requests (UNC Pol. 400.5 (R) (NC State Pol. 01.05.01 App. 1, V.f.iii)) (as needed)
  Review and approve the establishment, continuation and discontinuation of Centers and Institutes.
• Degree Program Proposals (NC State Pol. 01.05.01, App.1, v.c.i) (as needed)
  Review and recommend approval to the BOT.
• Graduation Report
  Receive report and comment as warranted.
• Holladay Medal Recommendations (NC State Pol. 01.05.01, App.1, V.e.i) (Annually)
  Receive and review nominations. Recommend nominees for approval to the BOT.
• Honorary Degree Recommendations (UNC Pol. Ch. 100.1, Appendix 1 (IV) (NC State Pol. 01.05.01, App.1, V.e.i)
  Receive and review nominations as needed. Recommend nominees for approval to the BOT.
• Personnel Requests (NC State Pol. 01.05.01, App 1.V.a.i.ii.iii.iv.v.vi.vii.viii.ix.b.i.ii) (as needed)
  Approve or recommend approval to the BOG.
• Reappointment, Promotion and Tenure Process
  Receive report and comment as warranted.
• Student Body President Report (NC State Pol. 01.05.01 App.1, V.h.i.)
  Receive report and comment as warranted.
• UNC Report on Intercollegiate Athletics (UNC Pol. 1100.1) (Annually)
  Receive and review report prior to submission to UNC System Office.
April

- **Annual Human Resources Compliance Report (UNC Pol. 600.3.4.)**
  
  *Review report prior to submission to UNC System Office.*

- **Centers and Institutes Requests (UNC Pol. 400.5 (R) (NC State Pol 01.05.01 App. 1, V.f.iii) (as needed)**
  
  *Review and approve the establishment, continuation and discontinuation of Centers and Institutes.*

- **Commencement Speaker – May (NC State Pol. 01.05.01 App. 1, v.e.ii)**
  
  *Provide advice in Chancellor’s selection of Commencement Speaker.*

- **Degree Program Proposals (NC State Pol. 01.05.01, APP1, v.c.i.i) (as needed)**
  
  *Review and recommend approval to the BOT.*

- **Distinguished Professorship Update**
  
  *Receive information about recently awarded professorships of distinction as applicable.*

- **Faculty Senate Report (NC State Pol. 01.05.01 App.1, V.h.i.)**
  
  *Receive report and comment as warranted.*

- **Honorary Degree Recommendations (UNC Pol. Ch. 100.1, Appendix 1 (IV) (NC State Pol 01.05.01, App.1, V.e.i)**
  
  *Receive and review nominations as needed. Recommend nominees for approval to the BOT.*

- **Nepotism Report (UNC Pol. 300.4.2) (Annually)**
  
  *Receive annual report on university’s compliance with UNC Policy 300.4.2.*

- **Personnel Requests (NC State Pol. 01.05.01, App 1.V.a.i.ii.iii.iv.v.vi.vii.viii.ix.b.i.ii) (as needed)**
  
  *Approval or recommend approval to the BOG.*

- **Residency for Full Scholarship Undergraduate Students (§ 116-143.6) (UNC Pol. 900.4 [G]) (NC State Reg 02.70.03)**
  
  *Receive report and comment as warranted.*

- **Staff Senate Report (NC State Pol. 01.05.01 App.1, V.h.i.)**
  
  *Receive report and comment as warranted.*

- **Students Requiring Special Consideration (UNC Pol. 700.1.1.1[R] and UNC Pol. 1100.1) (NC State Reg 02.10.04)**
  
  *Receive report and comment as warranted.*

**Salary Ranges for Senior Academic and Administrative Officers (SAAO) (UNC Pol. 600.3.4) (NC State Pol. 01.05.01, App. 1, V.a.ii)**

*Review and approve recommended ranges.*
Special Meetings (called as needed)
- There may be items that need the committee’s consideration in between the regularly scheduled meetings. In these cases, a special meeting of the committee will be held.

Additional Topics for Discussion
- Topics associated with implementation of the strategic plan/other topics of interest
- Updates from the Provost

Desired Outcomes
- To comply with delegated authority and assignments as prescribed by N.C. General Statutes, UNC Board of Governors Policies and NC State University Policies.
- To keep the Board fully informed of major issues and policies associated with the governance of the university.
- To solicit the Board’s input on policy, strategy and goal-setting for the university.
CONSENT
AGENDA
ITEMS
The University Affairs Committee of the Board of Trustees of North Carolina State University met July 10, 2019 in the Winslow Hall Conference Room.

Members Present: Tom Cabaniss, Acting Committee Chair
Emma Carter
Jimmy Clark, Board Chair
Ron Prestage

Mr. Tom Cabaniss chaired the meeting in Mrs. Ann Goodnight’s absence. Mr. Cabaniss called the meeting to order at 3:51 p.m. He called roll and noted that with the addition of Chairman Clark, a quorum was present.

All members of the Committee were reminded of their duty to avoid conflicts of interest and appearances of conflicts of interest under the State Government Ethics Act. It was inquired as to whether there were any known conflicts of interest or appearances of conflict with respect to any matters coming before the Committee at this meeting. There being none, the meeting continued.

Consent Agenda
A motion was made by Mr. Clark to approve the consent agenda which included approval of the June 10, 2019 open and closed session meeting minutes; four academic program requests (Change in Delivery Mode for the Master of Management, Change in Degree Program Title to the Bachelor of Science in Crop and Soil Science, and Discontinuation of two degree programs - the Bachelor of Science in Soil and Land Development and the Bachelor of Science in Extension Education); designation of a time limited option for a distinguished professorship; and conferral of tenure to three new faculty members joining the university in the fall. Dr. Prestage seconded the motion. The motion carried.

Requested Action
Ms. Sheri Schwab, Interim Vice Provost for Institutional Equity and Diversity, presented revisions to Policy 04.25.05 – Equal Opportunity, Non-Discrimination and Affirmative Action. She explained the most substantive revisions occur in section 4 of the policy and include the definition of sexual harassment. The other revisions are to provide overall clarity throughout the policy. A motion was made by Dr. Prestage and seconded by Mr. Clark to recommend the policy revisions to the full board for approval. The motion carried.

Informational Report
Provost Arden provided an update on six new certificate programs and discussed the 2019-2020 faculty salary ranges that have been approved by the Chancellor.

Closed Session
At 4:02 p.m. a motion was made by Chair Cabaniss, and seconded by Dr. Prestage, to go into closed session to prevent the premature disclosure of an honorary degree or award; to establish the amount of compensation and other materials terms of an employment contract or proposed employment contract; and to consider the qualifications, competence, performance, character, fitness, conditions of appointment or conditions of initial employment of an employee or prospective employee. The motion carried.
Reconvene in Open Session
After coming out of closed session, Chair Cabaniss announced the meeting in open session.

Dr. Prestage moved to approve the personnel item discussed in Closed Session related to the appointment and initial salary of a Dean. Mr. Clark seconded the motion. The motion carried.

With no further business, Chair Cabaniss announced the meeting adjourned at 4:09 p.m.

Tom Cabaniss, Acting Committee Chair
MEMORANDUM

TO: W. Randolph Woodson  
Chancellor  
NC State University

FROM: Mladen A. Vouk  
Vice Chancellor for Research and Innovation  
NC State University

SUBJECT: Recommendation to continue Future Renewable Electric Energy Delivery and Management Systems Center (FREEDM) under Regulation 10.10.04

DATE: July 29, 2019

The Future Renewable Electric Energy Delivery and Management Systems Center (FREEDM) began its tenure as a National Science Foundation (NSF)-funded Engineering Research Center (ERC) in September 2008, and was established simultaneously as a UNC System-sanctioned membership Center by the NC State Board of Trustees. Over the 10-year funding lifespan of NSF’s ERC program, FREEDM research and education programs received more than $36 million in federal support to pioneer technologies that will help create the modern electric power grid. FREEDM will “graduate” from the NSF’s ERC program in August 2019 and plans to continue its important work for NC and the nation with support from its industrial partners as well as follow-on funding from extramural grants and contracts.

FREEDM provides reports of its activities annually to the NSF and NC State, and participates in formal five-year periodic reviews conducted by NSF. NC State takes advantage of these annual and periodic federal reviews to satisfy University oversight requirements specified in Reg. 10.10.04. The most recent periodic review delivered by NSF spanned ten years of Center accomplishments, as well as prospects for the future. The consensus review provided by NSF concludes that the Center has (i) largely achieved its initial vision, (ii) developed a strong brand and leadership in the field, (iii) deployed three testbeds that will serve well into the future, and (iv) nurtured productive relationships with key industrial partners. The NSF reviewers also concluded that much work remains to be accomplished to provide confidence that the Center will operate sustainably into the future.

Given the effectiveness of ongoing operations within the Center and plans that will enable the Center to achieve its research goals in a sustainable manner, the NC State College of Engineering requests continuance of FREEDM as a University Center as sanctioned by the Board of Trustees. The Office of Research and Innovation and the Provost endorse the request by the College to continue FREEDM, and I request your approval of this recommendation.

MAV/mh

cc: Louis Martin-Vega, Dean, College of Engineering  
John Gilligan, Executive Associate Dean  
Iqbal Hussein, Executive Director, FREEDM  
Jonathan Horowitz, Associate Vice Chancellor for Research  
Larisa Slark, Centers and Institutes Specialist
MEMORANDUM

TO: Mladen Vouk
Vice Chancellor for Research and Innovation

FROM: W. Randolph Woodson
Chancellor

SUBJECT: Recommendation to continue the Future Renewable Electric Energy Delivery and Management Systems Center (FREEDM) under Regulation 10.10.04

DATE: July 30, 2019

In response to your Memorandum dated, July 29, 2019, authorization is hereby granted to forward the request to continue the Future Renewable Electric Energy Delivery and Management Systems Center (FREEDM) to the Board of Trustees for approval.

WRW/mh

cc: Louis Martin-Vega, Dean, College of Engineering
John Gilligan, Executive Associate Dean
Iqbal Hussein, Executive Director, FREEDM
Jonathan Horowitz, Associate Vice Chancellor for Research
Larisa Slark, Centers and Institutes Specialist
July 22, 2019

Dr. Jonathan Horowitz  
Associate Vice Chancellor for  
Research Infrastructure and Development  
Office of Research and Innovation  
Poulton Innovation Center 212  
Campus Box 7018  
Raleigh, NC 27695-7018

Dear Jon:

The College of Engineering (CoE) has reviewed the progress and performance of The Future Renewable Electric Energy Delivery and Management Systems Center (FREEDM), sponsored by the National Science Foundation (NSF). The review is based on the extensive Tenth Year Reverse Site Visit and Review (attached). A self-study report covering the 10th year accomplishments and journey into the future was submitted by the FREEDM center. A Reverse Site Visit Team (RSVT) spent two days at NSF on October 25-26, 2018, with presentations by RSVT and the RSVT answering questions, both orally and in written form.

A summary report (attached) was generated by the RSVT based on the site review and self-study. The FREEDM Center [RSVT] responded to comments and questions. We agree with the report that, FREEDM has performed admirably in its mission as a research center. Budget and sources of funding are adequate and a sustainability plan is in place. Moreover, faculty and student interactions among colleges are strong and service provided to NC industry and government is highly valued. We agree with many of the suggestions to help strengthen FREEDM and to diversify the funding base.

At this time, we recommend that FREEDM be continued as a Board of Governors Center in the UNC System. The CoE feels that the goals and important services of the Center cannot be provided by any other organization in the College or UNC system. FREEDM is an essential part of the national research program to implement renewable energy in the US. In addition, FREEDM provides the fundamental research platform for the Power America Manufacturing Institute at NCSU.

Sincerely,

Louis Martin-Vega, Ph.D., P.E.  
Professor and Dean

Attachments [2]

cc: Mladen Vouk, Vice-Chancellor for Research  
Larisa Slark, Centers and Institutes Specialist, Office of Research and Innovation  
John Gilligan, Executive Associate Dean, College of Engineering  
Iqbal Hussein, Executive Director of FREEDM  
Dan Stancil, Department Head, Electrical Computer Engineering
FREEDM 10th Year ERC Reverse Site Visit Agenda
Location: NSF

DAY 1: October 25, 2018 —Room E3430

8:00 AM Reverse Site Visit Team Briefing  C. Londoño/E. Misawa
9:00 AM Break (15 min)
9:15 AM Welcome and Introductions  C. Londoño/E. Misawa
9:30 AM FREEDM – An ERC Success Story  Iqbal Husain
10:10 AM Accomplishments & Future Plans
   1. HIL Testbed and FID and FSU partnership – Bruce McMillin (15 min)
   2. GEH TestBed - David Lubkeman (15 min)
   3. LSSS Testbed and ASU Partnership – Raja Ayyanar (15 min)
   4. DGI, Cybersecurity and MS&T partnership - Bruce McMillin (15 min)

11:10 AM Break (15 min)
11:25 AM Accomplishments and Future Plans (continued)
   1. Advanced Storage and FAMU partnership - Jim Zheng (15 min)
   2. DESD, SST and Future Plans - Srdjan Lukic (20 min)

12:00 PM Lunch
1:15 PM Workforce Development
   1. College Education – Pam Carpenter (10 min)
   2. Undergraduate, Pre-college and k-12 Programs – Pam Carpenter (30 min)

1:55 PM Students Perspective – Thomas Dotson (10 min)
2:05 PM Culture of Inclusion – Roy Charles (10 min)
2:15 PM Innovation Ecosystem – Ken Dulaney (30 min)
2:45 PM C2C Collaboration Update – Joe DeCarolis (20 min)
3:05 PM Break (15 min)
3:20 PM Sustainability and Future Plans for the Center –
   Srdjan Lukic or Iqbal Husain (30 min)
3:50 PM Reverse SVT Private Discussion
4:30 PM Questions and Answers
5:30 PM Adjourn FREEDM Team
5:45-6:30 SVT Discussion and Prepare for Next Day

DAY 2: October 26, 2018 —Room E3430

9:00 AM Summary Report Writing Session - Reverse SVT
4:00 PM Adjourn Reverse SVT
SITE VISIT REPORT TEMPLATE & ERC REVIEW CRITERIA
PANEL ID: V190341

National Science Foundation
Division of Engineering Education and Centers

Future Renewable Electric Energy Delivery and Management (FREEDM) Systems Center (FREEDM) - Response

North Carolina State University, Arizona State University
Florida State University, Florida A&M University
Missouri University of Science and Technology

October 25-26, 2018

Summative Merit Review Criteria and Site Visit Report Outline
Performance Years One through Ten
(September 1, 2008 to August 31, 2018)

The FREEDM Systems Center Leadership is pleased to have the opportunity to respond to feedback provided by the NSF Reverse Site Visit Team and is also thankful for the encouraging comments on our successes. The Center Leadership views the opportunity to present feedback to Industry as a means to continue the innovations and research and education methodologies as the center moves beyond NSF support. The feedback also establishes the value proposition to the University Administration for continuation of institutional commitments for sustaining the Center in the years beyond NSF support.

The FREEDM Systems Center is thankful to the National Science Foundation and the Management of the Directorate of Engineering for granting the funds for the FREEDM Center to the College of Engineering at the NC State University and its partner institutions. We acknowledge the commitment and support of Lynn Preston and the Program Directors from the NSF, Barbara Kenny, Eduardo Misawa, and Carmina Londoño during the 10 years and the many site visit reviewers whose critiques, valuable comments, and feedback continued to improve the performance and output of the FREEDM Center.

Responses to Weaknesses, Opportunities and select individual program feedback are presented in red preceded by "Response:" in the following document.
Site Visit Team Members

Eyad Abed
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University of Maryland

Aniruddha Gole
Distinguished Professor
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Systems Engineer
GE Global Research, Retired

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Barbara Kenny
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A. Executive Summary

Intellectual Merit:

The FREEDM Center had a transformative approach to creating the next generation of electric power distribution systems, with a structure very different from present-day systems that tend to include bulky and inefficient transformers which are severely affected by network faults and voltage distortions. The FREEDM vision proposed new energy cells based on power electronic components and improved energy storage systems to enable power delivery with higher efficiency and power quality. Using advanced distributed automated control concepts, this was expected to lead to a resilient grid with high efficiency and high-power quality, that could enable easier harnessing of distributed renewable energy resources such as wind and solar energy. To achieve this goal, the Center needed to overcome major barriers. The required precision power handling components, and semiconductor devices with sufficient voltage and power ratings and low losses did not exist at the time FREEDM started. The FREEDM Center’s vision was to overcome these critical barriers.

The central enabling technology for the FREEDM system was energy cells that would be interfaced using the solid state transformer (SST), which is a power electronics based energy transformation device that can precisely control the power flow as well as provide regulation of voltage and power factor. Another key component was a solid-state fault isolation device (FID) that would quickly isolate a faulted section of the network in a matter of milliseconds.

To achieve its vision, the Center has followed the approach required by NSF involving the ERC 3-Plane Strategic Planning Chart. At the fundamental research plane, FREEDM researchers focused on new Post-Silicon Devices (PSD) that have low losses and can withstand high voltages. It also planned to develop new advanced control, stability analysis, and modelling methods. These fundamental science thrusts were to contribute to the enabling technology plane components, i.e., the SST and FID. Another key enabling technology is the “distributed grid intelligence” (DGI) which would reside within every FREEDM component and enable ‘plug-and-play’ functionality with the other components. The components constructed in the enabling technologies plane would then migrate to the top-most plane, which was to consist of three testbeds. The Hardware in the Loop (HIL) testbed uses a real time simulator which is interfaced to control and power hardware. This is used to test, refine, and validate the FREEDM control algorithms as well as the FREEDM power-electronic hardware. Stability and control of larger systems is investigated using the Large Scale System Simulation (LSSS) testbed. Finally, a fully functional but limited size FREEDM grid is implemented on the Green Energy Hub (GEH).

Response: We thank the NSF and Reverse-SVT for recognizing FREEDM efforts in involving the ERC 3-Plane Strategic Planning Chart in its approach to achieve the vision. The testbeds in FREEDM drove the vision and mission of the Center. The testbeds are essentially the platform for the development of the enabling technologies which lead to systems development. Viewing in reverse, the interplay of activities in the fundamental research plane contributed to the enabling technology plane and the components constructed in that plane that migrated to the testbed plane. The research agenda of FREEDM came to completion with the help of the testbeds, and in parallel, the Center-conceived innovations move towards maturity. The testbeds also play an important role in attracting relevant industries to become members of the Center and provide appropriate mechanisms to train and educate undergraduate and graduate students. Testbeds further enhance the capabilities
of the postdocs and other faculty members. Additionally, the development of the testbeds significantly facilitated the transfer of technology from the Center to the Industries.

Overall, the Center has largely achieved its vision. The testbeds clearly demonstrated the viability of its essential vision. Particularly impressive is the HIL testbed on which many of the real-time FREEDM controls as well as FREEDM power-electronic hardware were validated. The LSSS testbed allows modelling of large networks and shows the scalability of the FREEDM concept. The GEH combines multiple SST interfaced energy cells to create a small but real FREEDM microgrid. The GEH and the HIL testbeds are now being recommended as test facilities for testing microgrid innovations from parties outside the ERC. This is in part due to the Center’s involvement in IEEE and other Standards and Guides (such as P2004 - Recommended Practice for HIL).

There was considerable cross-thrust integration with close collaboration. This contributed significantly to the implementation of the Center’s vision. Discussions between the enabling technology thrusts and the fundamental thrust dictated how the enabling technology components, i.e., the SST and DGI were implemented. The enabling technologies fed back the properties of their developed components to the fundamental science thrusts to define performance requirements for the PSD elements and the controls. The successful development of the SST and DGI eventually led to the success of the three testbeds. The Generation-3 SST was successful in exceeding the targeted 97% efficiency figure in the original vision.

Nevertheless, certain original objectives remained unfulfilled. The PSD initiatives have yielded a wealth of information on the characterization of SiC and GaN devices. One particular achievement was the development of a 10kV SiC MPS diode which uses a novel geometry that results in lower switching and conduction losses. However, fabrication challenges remain a barrier to constructing and testing larger devices. Consequently, one of the original objectives of the Center—that of using such higher rating devices in the enabling technology layer are yet to be fulfilled. Nevertheless, a workaround was found where commercial post-silicon device samples were acquired and used for the Generation-3 SST. Likewise, as of year 10, the Center has not been able to create an FID with the required current rating.

**Response:** We appreciate the SVT comment on the PSD initiatives. We acknowledge the appropriate comments regarding the achievements and the issue of moving the PSD outcome from the fundamental plane to the next level.

After a late start, the ERC was able to implement a new approach to distributed grid intelligence (DGI). The DGI was capable of hosting advanced control algorithms developed in the system theory and control sub-thrust and was also able to detect physical grid faults as well as cyber attacks in an integrated framework. Resiliency is achieved by automatic reconfiguration following a fault or attack. Using the DGI, key functionalities such as energy management and volt-var control can be readily implemented.

**Response:** The FREEDM team would like to clarify that the DGI/RSC efforts didn’t have a late start and that the type of DGI/RSC efforts can be broadly categorized into two phases. The DGI infrastructure development started in year one and was completed by year six of the Center. The DGI/RSC efforts concentrated on applications development and implementation within the DGI infrastructure in the last four years of the Center.
A true measure of the success of the ERC's vision would be how well it is accepted by the wider power community, known to be highly conservative. The ERC is now recognized internationally as the center of expertise in its field. Its collaboration with other research centers such as CREDENCE, and collaboration with institutions in Ireland and Spain go a long way in supporting this view. The ERC spawned 10 startup companies. One, Gridbridge that built distribution SSTs was recently acquired by ERMCO, a major transformer manufacturer. This is a potentially major first step in the wider dissemination of the FREEDM concept. Twenty companies are members of the Center, with Duke Energy, NYPA, ABB, TOTAL and Gilbarco Veeder-Root being full members. Duke Energy in particular is working closely with the Center in testing FREEDM components in their network.

Response: The FREEDM Center appreciates the acknowledgement by the NSF that the Center is recognized internationally as the Center of excellence in its field. In addition to the 10 startup companies already reported, there is potential for additional startups under FREEDM with the intellectual property filed and awarded in the later years of the program. Some of the member companies such as Duke Energy, ABB, NYPA, and Gilbarco Veeder-Root continue to show significant and committed partnership with the FREEDM Center. In addition, the FREEDM IAB has expressed interest in seeing more startups in the future and the Center will continue to work towards that goal.

The education efforts of the Center have also matured with comprehensive undergraduate and graduate student research participation as well as the mentoring of K-12 students through various outreach initiatives. Specialized MS courses and streams based on the Center’s research activities have been established at all partner institutions. These efforts have led to the production of a record number of Ph.D. and MS students. These students have been welcomed as a necessary asset by industry. Several new courses have been implemented at all member universities. Eight new courses were introduced at all partner universities. Three partner schools, NCSU, ASU and MST are being recognized among the leading institutions offering comprehensive power programs.

The FREEDM research team consists of world-class researchers with the right mix to deliver on the objectives. The team evolved, responding effectively to changing requirements that emerged over the lifetime of the Center. Although it largely consists of electrical engineers, their skill sets are very diverse ranging across semiconductor physics, controls, and power system analysis. In addition, computer scientists are involved in the DGI thrust. Later, appropriate faculty members were added to bring in additional expertise. An example of this was the creation of a sustainable energy technology and policy cluster at NCSU that includes energy economists, policy analysts, and life cycle analysts. A key factor in the success of the Center is the Center’s present Director, Dr. Iqbal Husain. He had a clear vision and took difficult decisions when needed. Similarly, the Industry Advisory Board was properly constituted and contributed to the success of the Center. The Center took diversity seriously and tried hard to create a diverse academic and research community. One commendable factor was the hiring of Diversity Director Dr. Roy Charles, who strived to create a culture of inclusion.

The resources available to the Center in terms of research funding, laboratory facilities, and student support have been extensive and have enabled it to carry out its vision. One shortcoming has been the NCSU's PSD fabrication facility which was unable to deliver the post-silicon devices required for implementation on the testbeds. Also, the resources required for education and outreach evaluation and assessment were limited.
During its tenure as an NSF ERC, the Center’s funding has come from the NSF as well as from industry memberships and associated government and industry projects. However, for continued existence beyond graduation, it will be necessary to seek alternate funding avenues. The Center will need to remain vigilant in its efforts to maintain its leadership in Smart Grid technology and reinvent itself over time as appropriate. The Center needs to establish mechanisms and incentives for all member universities to remain engaged in the Center and continue pursuing significant team efforts in the future. Collaboration between the Center and PowerAmerica at NCSU could be a valuable asset to improve the facilities available to the PSD effort and to help in future commercialization of its research.

**Broader Impacts:**

Emissions from burning fossil fuels for the generation of electric power are contributing to global climate change. Alternate forms of energy, e.g., renewable sources such as wind and solar, have been proposed and are being deployed, but are intermittent and not immediately dispatchable. This requires careful consideration when integrating these sources into legacy power grids. The FREEDM ERC has offered a vision of a controllable power distribution grid that can integrate and coordinate the various renewables and newer loads such as electric vehicles. The vision has a significant societal benefit by offering a methodology and various technologies that will enable a distribution system of the future that can integrate the necessary renewables and accommodate the increasing number of electric vehicles. In addition to notable technological innovations, described elsewhere in this report, the Center has made a lasting and significant impact on the development of a workforce with the skill set necessary to address challenges associated with the development and deployment of renewable energy resources. Since inception of the Center, the partner universities have developed several new courses and degree/certificate programs, both at the undergraduate and graduate levels. In particular, through research efforts and development of three state-of-the-art testbeds, the education of ERC students has included access to unique testing facilities along with exposure to the current best ideas in the integration of renewable energy resources into a distribution grid. This educational experience makes the ERC students ideal candidates to enter the industry workforce and begin to contribute in substantial ways. Industry members often cite the high talent the Center graduates acquire as one of the reasons for joining the Center, and approximately 30% of Center graduates are hired by Center members.

The Center has also worked to increase the diversity of the participants in the energy sector through attention to creating a “culture of inclusion” environment while also recruiting for new participants from various targeted efforts such as visits and virtual presentations to minority serving institutions as well as exhibiting at STEM conferences (i.e. American Indian Science and Engineering Society (AISES), National Society of Black Engineers (NSBE), Society of Hispanic Professional Engineers (SHPE), Society of Women Engineers (SWE)). The Center has noted the relative lack of women in the electrical engineering discipline overall as a challenge to increasing numbers in a specific sub-field of electrical engineering graduate education, but some successes have also been noted. In particular, one woman originally on the leadership team is now Vice Provost for Research at MST. In another case, a female faculty participant in the Center has gone on to establish her own Engineering Research Center and became its Center Director. In addition, the Center has consistently offered research experiences for undergraduates (REU) programs at all of the institutions of the Center, with special attention to the recruitment of women and under-represented minorities to these programs. For
example, in Year 10, 29% of REU participants were women, 14% were African-American, and 21% were Hispanic.

The Center also offered an Undergraduate Research Scholars program that provides undergraduates an opportunity to be in a research environment during a year-long academic program where they experience research, learn technical and professional development skills, and have opportunities to network with industry. Over 100 undergraduates have had this experience through the FREEDM ERC.

The Center’s work has also had an impact on industry. There are twenty members, and three key industry players, ABB, Duke Energy and NY Power Authority, have been Full Members (the highest level of involvement) for several years. Duke Energy in particular is working closely with the Center in testing FREEDM components in their network.

The Center has also had significant success with technology transfer. Innovations related to the signature technology area, the solid state transformer (SST), were licensed early on in the Center’s history by a start-up company, GridBridge, which worked closely with the Center and hired some of its graduates. GridBridge went on to develop a low voltage version of the SST which found a market in rural electrical distribution systems. This company was acquired in 2017 by ERMCO (Electric Research and Manufacturing Cooperative), a wholly owned subsidiary of Arkansas Electric Cooperatives based in Tennessee. This rapid timeline of start-up to acquisition is particularly commendable given the conservative nature of the power industry in adopting new technology.

SWOT Analysis

STRENGTHS

1. The Center has established strong intellectual leadership and strong branding in the Center’s core technology areas.

2. The Center researchers were early innovators in Solid State Transformers (SST) and have now demonstrated the generation 3 version with an efficiency exceeding 97% which meets the goals of the original proposal.

3. The three testbeds are a strength for both research and education programs.

4. Students are well organized and are proactive in professional development and outreach activities which enrich the Center.

5. The leadership team has been responsive and flexible in addressing site visit team recommendations over the course of the Center.
6. The Center has secured significant institutional support including funding from NCSU for facilities (two years support with possibility of extension) and administration, including education and diversity directors.

7. The Center makes use of its extensive simulation capabilities to derive and refine component requirements and investigate overall system interactions. The hardware in the loop (HIL) simulation capability also enables device design validation.

8. The Center has cultivated significant relationships with industry resulting in a core group of committed partners including Duke Energy, NYPA, and ABB.

9. The Center has spawned several startups included GridBridge, which has been acquired.

10. The Center to Center (C2C) collaboration shows significant interest and buy in from international community and offers FREEDM an opportunity to focus on an extensive real-world system.

11. Center has embraced the concept of Culture of Inclusion, which moves them beyond simple diversity counts.

WEAKNESSES

1. There are limited resources for education and outreach evaluation and assessment.

Response: The FREEDM education program resources have been maintained through year 10 and beyond with funds from NSF and other sources. As we entered the ramp-down phase, additional funds from other programs such as PowerAmerica and Duke Energy Foundation were leveraged to maintain the education program with consistent large number of activities. We acknowledge that the perception of the Reverse-SVT is due to our own lack of adequate reporting on evaluation and assessment in the year 10 annual report. We have attempted to rectify the situation by augmenting the report with additional information in the Education Section of this document.

2. Controls methodology developments are not as comprehensive as needed for the envisioned system.

Response: The systems controls methodology has evolved over the past four years and we are gradually integrating the four different levels of controls into the FREEDM system, viz., PWM controls, primary controls, secondary controls, and tertiary controls. The center had a late start with the development of primary level control algorithms which caused a delay for implementing a comprehensive systems controls. However, we quickly overcame the challenges, developing several primary level controllers from fundamental principles for the FREEDM system. The SMC thrust developed controllers for energy management (secondary and tertiary level controls) and power management (primary level controls) have been validated in the LSSS, HIL, and GEH testbeds. Several of the primary controls have been integrated into the systems demonstration projects, and more are being integrated for a comprehensive and diverse set of controllers. The work on cotrols
methodology continues in FREEDM with new generation of PhD students and post-doc scholars who are returning to FREEDM during the summer to continue with the work.

3. The Fault Isolation Device (FID) is not sufficiently mature to meet current market requirements.

**Response:** FREEDM focused on developing the FID with the hybrid technology of an ETO-based solid state component and a piezoelectric actuator-based fast mechanical switch component. While the fast mechanical switch achieved its targets, the ETO device and solid state component didn’t reach expected levels which remained an obstacle for the FID to meet market requirements. FREEDM continues its efforts to further develop the FID with alternative technologies and other sources of funding at both NC State and Florida State University.

4. There is no clear strategic plan for staying together as the FREEDM Center.

**Response:** The center PIs continue to work together to secure research funding to advance the FREEDM vision in an organic way although not through a planned approach. These teams are formed based on the topic of funding, the expertise required, and the relationships established through the FREEDM Center. Several proposals to NSF and DOE from teams within the FREEDM Center have been funded and many more are currently under review. Various challenges prevented the partner institutions from committing resources to the FREEDM Center that would help develop a strategic plan for staying together for research activities. The infrastructure developed through the ERC program will attract researchers to use one another’s facilities as unique capabilities were established over the past 10 years. On the education side, course curriculum agreements have been executed which will help course-sharing among the partner institutions.

5. The Center has not integrated their developed post Silicon devices into the enabling technology devices.

**Response:** It is correct that the devices developed in the PSD sub-thrust are not used due to the low TRL level. However, the device development work has significantly contributed towards improved device design and design methodology by the device manufacturers who can make reliable and robust devices for use in enabling technologies. Nevertheless, the present evolutions of SSTs and FIDs are all using Wide Bandgap (WBG) power devices. It was the analysis of SiC power devices in Year one in the PSD thrust that resulted in procurement of 10 kV SiC power MOSFETs from Cree (now Wolfspeed) that were successfully used to make Gen-II and Gen-III SSTs. The selection of MOSFET vs. other devices was an outcome of Year one and Year two study. The Center is continuing to utilize SiC devices from Wolfspeed for the Gen.-IV SST development

**OPPORTUNITIES**

1. The Center should seriously consider identifying and developing services (e.g., studies, testbed use, access to staff and students) and other tangible benefits that would be of value to industry, which would attract new members and funding.

**Response:** We thank the Reverse-SVT for identifying the opportunity. We have been using the Center testbeds for executing testing services agreement with our industry partners and, in fact, some of our
partners have utilized the benefit. We have also used our testbed facilities for demonstrations in short courses presently being offered. We will continue to explore other tangible benefits that would be of value to the industry.

2. The Center needs to establish mechanisms and incentives for all member universities to remain engaged in the Center and continue pursuing significant team efforts in the future.

**Response:** We appreciate the opportunity identified by the Reverse-SVT. We will continue to explore potential mechanisms and incentives for all member universities to remain engaged in the Center. In one of our attempts to establish a mechanism, we are planning an annual conference in March 2019 with engagement and participation of partner Universities. We are also exploring with our Industry Members on mechanisms of how we can engage partner University PIs to remain engaged in Industry seed funded projects.

3. The Center needs to remain vigilant in its efforts to remain a leader in Smart Grid technology and reinvent itself over time as appropriate.

**Threats**

None identified
B. Summary Analysis of Performance in the ERC’s Key Features over Ten Years and the Strength of its Future Plans for Self Sufficiency

(1) Vision and Impact

The FREEDM Engineering Research Center’s vision is based on the concept of an “Energy Internet” - wherein generation, distribution, control, and end-use of electric power and energy can be achieved seamlessly. The vision is transformative in that it moves away from centralized and monolithic systems towards one that is highly distributed, yet secure, carbon-minimal, reliable, and resilient.

The Center’s efforts towards this vision, as guided by the three planes: fundamental science, technology, and demonstration are as follows. In the fundamental science plane, the emphasis is on high performance post-silicon (Silicon Carbide (SiC) and Gallium Nitride (GaN)) switching devices with appropriate system modeling and controls. In the technology plane, the Center has developed and refined a set of enabling technologies which include: the Solid State Transformer (SST), a Fault Isolation Device (FID), Distributed Energy Storage Devices (DESD), and a platform called Distributed Grid Intelligence (DGI). In the demonstration plane, the Center has developed three testbeds: Large Scale System Simulation (LSSS), Hardware-in-the-Loop (HIL), and the Green Energy Hub (GEH).

Over a decade, the Center’s strengths emerge through several noteworthy accomplishments which support its vision. The SST has progressed from a Gen-I, Silicon (Si)-based 6.5 kV Insulated-Gate Bipolar Transistor (IGBT) to a Gen-II, Silicon Carbide (SiC) based (15kV metal-oxide-semiconductor field-effect transistor (MOSFET)), to a Gen-III (SiC and Gallium Nitride (GaN)) based device boasting efficiencies over 97% as originally envisioned in the ERC proposal. The Center’s leadership in SST technologies has helped it achieve brand recognition in the broader power engineering community. The three testbeds are now sufficiently mature and have over the years, helped the Center validate and demonstrate several key functionalities and use cases. The 1 MW Green Energy Hub (GEH) testbed in fact, provides a credible architecture and a platform to demonstrate how FREEDM technologies can transition from laboratory-scale concepts to actual field deployments. The testbeds also serve as a natural focal point for industry collaboration and engagement. These achievements demonstrate that the Center has a clear understanding of key technology areas. The Center’s research has led to well over 800 distinct high-quality publications, while its education and workforce development efforts have conferred around 220 doctoral degrees, 183 Masters’ degrees, and 30 undergraduate degrees while creating 25 new courses and 10 new full-degree programs. Graduates from the Center are well-placed, mostly in industry, and a few in academia. The Center’s impact is also being felt through its involvement in workshops, short courses, and synergistic international collaborations, especially with Ireland. On the technology transfer front, the Center has had good impact, filing over 100 invention disclosures resulting in 27 patent awards, 9 licenses, and 11 spin-off companies with 1 company (GridBridge) that was acquired.

The Center’s weaknesses emerge in a few areas within the three planes and its efforts towards cohesively sustaining its activities. Post-silicon device research, though exceptional, has still remained on the fundamental science-plane and has not fully matured its way into FREEDM’s enabling technology plane. The thrust on systems modeling and control (though appropriate to support part of the vision) is not as comprehensive to support the overall vision. The FID, though an important component, has not matured enough to meet current market requirements.
In summary, the Center’s accomplishments over a decade are commendable and overall, its technical leadership and contributions have helped bring the vision of an internet-like energy delivery system, which is necessary for society to have the full benefit of renewable energy resources, closer to fruition.

(2) Strategic Plan

The FREEDM Systems Center has developed several generations of devices and software over its 10 years of existence as an NSF Engineering Research Center. The Center’s research has followed the ERC’s 3-Plane Strategic Planning Chart, and the Center has maintained leadership in fundamental science and technology for future smart distribution grid components and architectures. During Year 10, the Center’s progress continued in the fundamental science, enabling technology, and system demonstration planes, guided by the Center’s core research vision. All FREEDM system components have been developed to useful degrees of functionality, with continued developments in progress in order to meet further functionality requirements in the next generation of component designs.

The SST technology is now in its fourth generation of development and remains at the core of the envisioned FREEDM system architecture. The completed third generation SST achieved a 97.5% efficiency level, thus meeting an original goal of the Center. For the fourth generation SST, the aim is to maintain this efficiency level while also achieving several functionalities that are not in the Gen-3 SST, including reaching the rated input voltage 7.2 kV level with full controllability of the Medium Voltage (MV) AC power factor, 400 V DC voltage and 240 V AC voltage regulation. In Year 10, the FREEDM Center team has focused on integration of a multi-SST hardware platform into the Green Energy Hub testbed, and on using the expanded testbed for validating the Center’s developed autonomous control and the distributed intelligence systems. The Center has also begun new related research projects, including one on medium voltage fast chargers for plug-in electric vehicles that utilize Center-developed Silicon Carbide (SiC) solid state transformer technology.

The Systems Theory, Modeling and Control (SMC) research thrust remains key for understanding performance and stability issues associated with distribution grids containing SST's coupled through the developed control and communications architecture. The Center’s research in the SMC area has continued to employ the invariants concept along with passivity-based control ideas, and effectiveness of developed control schemes is being verified through simulations. Guarantees of performance through fundamental analysis would be desirable, supported by extensive simulations, which can perhaps be automated to some extent and cover many possible contingencies.

At the enabling technology plane, progress continues in all four thrusts. The SST thrust is a key strength of the Center, followed by the DGI and DESD thrusts. The DGI thrust, including the work of the FREEDM Architecture Working Group (FAWG), serves as the glue that automatically controls all the hardware components, using distributed communications and decision making. The FID thrust has produced innovative fault isolation devices, which are demonstrated on the GEH.

The Center has been consistently migrating the research outcomes of projects under these thrusts to the upper plane through demonstrations in the three testbeds, all of which are operational and mature. As new generations of components with greater functionality are developed, they will be integrated
into the testbeds and their performance within an overall FREEDM distribution system will be validated.

Even upon having highly mature components meeting real-world requirements verified through extensive simulations, the Center will need to convince a conservative utility industry to deploy FREEDM-developed technologies. Moreover, in recent years competing technology developments have begun to appear, and further such developments are to be expected in the future. Thus, the Center needs to remain vigilant in its efforts to remain a leader in Smart Grid technology and reinvent itself over time as appropriate.

The Center has strong partners in industry and overseas institutions. These collaborations should continue, as they provide the FREEDM Center leadership and faculty with excellent research and development partners, as well as opportunities for growth for students.

(3) Research Thrusts

**Thrust 1: Solid State Transformers**

This research thrust includes the following three projects in Year 10:

- Gen-4 SST Design
- Multi-SST Medium Voltage Testbed (in GEH)
- SST Residential Demonstration (in GEH)
- MV SST Development leveraging PowerAmerica funding
- SiC Power Devices for SST Applications

The solid-state transformer (SST) achievements during the last year build on the completed Gen-3 design from Year 9 in several directions. One is work toward the design and development of the Gen-4 SST. The target for the Gen-4 SST design is to maintain the 97.5% efficiency level achieved in the Gen-3 design while also achieving several new functionalities that will be important for deployment, namely: reaching the rated input voltage 7.2 kV level with full controllability of the MV AC power factor, 400 V DC voltage and 240 V AC voltage regulation. Also, in Year 10, the FREEDM Center team has been integrating a multi-SST hardware platform into the Green Energy Hub testbed and using this expanded testbed for further validation of FREEDM’s autonomous control and distributed intelligence systems. The Center has also started work on medium voltage fast chargers for plug-in electric vehicles that utilize its Silicon Carbide SST technology.

FREEDM was an early innovator in SST technology and its work led to the creation of several start-up companies, including GridBridge, which was subsequently acquired by another US firm. With the continued positive developments summarized above, it is anticipated that FREEDM will continue to play a leading role in SST advances in the coming years and should make progress in integrating post-silicon devices into future SST designs.

**Thrust 2: Fault Isolation Devices**

The objective of the Fault Isolation Device (FID) is to support the Center’s vision to control transients during turn-on and turn-off in medium voltage circuits. The Center has successfully developed and tested Gen-1 and Gen-2 versions of the device for 15 kV class applications with continuous currents.
of 50 A and fault currents up to 400 A. It is interesting to note that these devices are silicon based. A hybrid device combining a vacuum switching chamber with a piezo-electric actuator - called the fast-mechanical switch, was also developed and patented as a Gen-2 offering. Testing and demonstration projects were conducted on the Green Energy Hub.

The group also explored the industry value for this application through an NSF I-Corps project and concluded that the ratings of the Gen-3 FID do not meet current market requirements. While the switching times are in the sub-cycle range (2 ms), the current handling capabilities were not sufficient to meet the needs of electric utilities. Reflecting on the findings from the I-Corps project, a new NSF project, headed by Georgia Institute of Technology is now focusing on the design of building viable prototypes for utility-scale deployment.

The appealing aspects (strengths) of the research include the device’s ability for ultra-fast fault isolation, intelligent communication and compatibility with other FREEDM technologies, possibility for supervisory control, and quick system voltage restoration during continuous operation. A significant weakness that the device is currently not viable for utility-grade applications because of its current handling abilities. However, it should be noted that this weakness does not undermine the Center’s overall vision. Additionally, the publications from this group are very limited.

**Thrust 3: Distributed Energy Storage Devices**

The Distributed Energy Storage Devices (DESD) thrust area resides in the technology plane, enabling several applications envisioned by the Center. The core functionalities and construction of DESD are based on the Solid State Transformer (SST), augmented by insights and findings in energy storage technologies. Therefore, DESD devices inherit the features, merits, and limitations of SSTs. The primary objectives are to develop modular, efficient, and scalable units that interface with the SST based distributed energy cells across the FREEDM grid. Having the ability to store and rapidly access energy is an important requirement for harnessing renewables and energy management in the grid. The DESDs include capabilities for online battery capacity estimation, real-time dispatch and control and utilize optimized and safe Li-ion chemistries. A key application for these devices is fast charging, especially for electric vehicles.

The Center has successfully leveraged SST research achieving efficiency levels over 97.5%. The Gen-4 SST-based fast electric vehicle (EV) charger has advanced the state-of-the-art (referenced by the classical transformer) by halving the power losses and cost, while shrinking the volume by 30x. Laboratory scale demonstrations have been conducted for a 50kW EV charging application for Nissan Leaf. These innovations have also been benchmarked with Tesla’s supercharger station. In comparison, the Center’s solution can serve 40 charging stalls while halving the losses for the same footprint. Besides EV charging, the efforts are being integrated for applications for Department of Energy led projects on Solid State Power Substations - where high voltage power electronic converters are used to provide enhanced capabilities for the power grid. The proposed solutions are also integrated with other research subareas of the Center - for example, the Distributed Grid Intelligence (DGI) module for real-time dispatch and decision making and incorporating insights (such as degradation models) from battery-based storage into the SST models. Several prototypes (AC and DC) have been developed and tested in the Green Energy Hub multi-SST testbed. A unique aspect is the Center’s ability to use off-the-shelf components (for example, Toshiba’s Lithium Titanium Oxide (LTO) batteries) while integrating them into Center-developed innovations, followed
by testing. The Center’s research activities in this area appear in prominent journals and conferences with core intellectual property developments protected by patents.

Overall, the work is highly applied, collaborative, ripe for emerging commercial and industry applications, and strongly aligned with the Center’s vision.

**Thrust 4: System Theory Modeling and Controls**

The incorporation of System Theory, Modeling and Controls (SMC) in the FREEDM ERC research, as described in the Year 10 report and final presentation, is representative of the state of the art in all three of these disciplines but is beyond the normal practice in Power Systems and Power Device Engineering. In Power Systems engineering it is common practice to work with large system simulations – but not typical to evaluate specific device-level innovations. In Power Device Engineering, it is common practice to work with device-level hardware simulations, but not typical to incorporate control system analysis or system-level effects.

The FREEDM ERC has used three levels of simulation to achieve the desired goals that include detailed device-level testing while at the same time evaluating the requirements and limitations of such devices in the context of their role in the larger system context. The LSSS is a high level power system simulation, the HIL is a hardware-in-the-loop simulator that incorporates actual hardware into a more focused simulation environment that represents the Low Voltage level system architecture (to design and evaluate DGI controls, fault isolation devices, and solid state transformers), the GEH (Green Energy Hub) is another HIL simulator that is used to evaluate the effect of larger disturbances due to distributed generation (e.g. wind power or large solar array, DRER, volt-var compensation) at the Medium Voltage level. These simulators allow some devices and concepts to be viewed or used at multiple levels (DGI, SST). This approach has enabled the FREEDM researchers to evaluate system effects such as islanding, voltage sag, and standards in a more complete way, and to gain a more complete understanding of device requirements.

This system level approach evolved in the course of the research at this ERC, based on annual reviewer suggestions, when Use Cases were developed in order to refine system level objectives, and to evaluate their impact on lower levels of the Power System. It ties together different simulation types (static, dynamic) that have been used in power system analysis and design.

This research does not advance the state of the art in control theory, but the program does effectively apply known results in control. In particular, the system/control theory result that a passive interconnection of passive circuits remains passive is used to deduce system level passivity from passive components in the DGI devices. In addition, there is another use of related results for hierarchical systems, where a hierarchical interconnection of stable systems can be determined to be stable. Lyapunov methods are also employed to deduce stability of nonlinear power management controls for intelligent power management (IPM), as described in Section 2.11.4 of the Year 10 report. These applications suggest further applications of control theory that might be applied to other system level stability issues, e.g., for application to the GEH.

These power system applications are innovative and have been described both in publications (Section 2.11.5) and intellectual property (Section 2.11.5) in the Year 10 report. They are considered to be a result of the synergy of disciplines within the ERC. The publications reporting these results
are in leading journals and conferences that are familiar to Power System researchers (e.g., IEEE Trans. Power Systems, IEEE Trans. on Power Electronics, IEEE Trans. on Industry Applications), and involve ERC members at NCSU, Missouri, ASU and FSU-FAMU. Several of the publications have attracted large numbers of citations (cf. publications 4, 7, 8 and 2 in the list of SMC publications, where other battery estimation and management related publications have also won awards).

**Thrust 5: Distributed Grid Intelligence / Reliable & Secure Communications**

The purpose of the Distributed Grid Intelligence (DGI) / Reliable & Secure Communications (RSC) thrust is to deliver an integrated plug-and-play software and functionality interface to all FREEDM system components so they can work together resiliently to achieve the FREEDM objective. This goal has largely been accomplished. The DGI is included in every FREEDM energy node. The DGI implemented in a completely distributed manner and is self-organizing and self-governing; and does not require a centralized coordinator. Rather than rely on cloud-based computing, which could have high communication latency, the DGI uses a “Fog” based architecture which relies on local communication between the nodes.

The ERC team developed a combined cyber-physical security approach that is able to detect and react to cyber-attacks, electrical system faults and hardware/software failures in a coherent manner. The approach uses “static and dynamic invariants” which are computed at each node. Sets of Lyapunov functions are computed and the operating philosophy is that any system action should act to reduce the Lyapunov function. This is taken as evidence that the system remains passive, thereby ensuring the stability of the overall system.

Iterative control algorithms are also being implemented using this approach. For example, static invariants enforce rating constraints, such as line flow limits, as well as other operating range restrictions, and are also used to identify erroneous information via attestation. A cyber-physical attack might also be identified using this approach, as it may lead to a lack of feasible solutions.

Using the DGI, the team implemented the necessary algorithms required to run a FREEDM grid. Examples include a load balancing algorithm which is able to modify the energy dispatch in the network following an electrical fault. A volt-var control (VVC) algorithm was also implemented. The VVC dynamically changes the var supply setting to regulate network-wide voltage and thereby excessive operation of tap-changing voltage regulators and switched capacitors is avoided.

The DGI/RSC thrust was largely developed in the last four years of the program. Although it worked effectively, control approaches other than those based on invariants were not sufficiently investigated. All work under the SMC thrust now seems to be concentrated at NCSU.

**Response:** The FREEDM team would like to clarify that the DGI/RSC efforts can be broadly categorized into two phases. The DGI infrastructure development started in year one and was completed by year six of the Center. The DGI/RSC efforts concentrated on applications development and implementation within the DGI infrastructure in the last four years of the Center.

**Thrust 6: Post-Silicon Devices**
The aim of this thrust was to create advanced low loss, high efficiency switching semiconductor devices for the FREEDM system components such as the Solid State Transformer (SST) and the Fault Isolation Device (FID).

A major achievement was a combination 10 kV MPS rectifier that combines cross sections of Schottky and Junction Barrier Schottky (JBS) devices to obtain a device with low ohmic resistance and low turn-on voltage. This research was driven by the need to improve the poor efficiency of the Generation I SST, which was attributed to losses in the 10 kV P-i-N flyback diodes. A breakthrough was achieved with innovations in edge terminations which resulted in a device with a high blocking voltage while still maintaining small leakage current. The performance of this device is significantly superior to that of the previously used 10 kV P-i-N device. The FREEDM 10 kV SiC MPS diode is a new component which is ready for industry commercialization for utility scale applications.

The PSD team also developed 10 kV 4H-SiC Junction Field Effect transistors (JFETs) and a new device called Field Control Diodes (FCDs) capable of bi-directional voltage blocking capability. As part of this effort, was the development of a new orthogonal bevel edged termination. This is the first and only method reported for bi-directional blocking.

The PSD team interacted with the SST developers and recommended the development of a 10 kV SiC MOSFET device, although they did not produce this themselves. This was later fabricated by CREE and used in the Generation 2 and Generation 3 SSTs.

The PSD team developed several new devices and promising semiconductor design methods. They have also conducted world class research on improving the characteristics of these devices. However, fabrication facilities available to the ERC continue to remain a challenge, and the Center has not yet been able to produce devices with sufficient voltage and/or current ratings required for the SST or the FID. However, the PSD investigators are also involved with the PowerAmerica Center at NCSU, and this collaboration is likely to rectify the situation.
Cross Cutting Themes

Systems Architecture

The FREEDM Architecture Working Group (FAWG) was established in year five of the ERC to coordinate with the thrust teams with the aim to facilitate the overall development and documentation of the hardware, software, and networking of the FREEDM components. In year six, the FAWG identified four levels for each physical layer to ensure robust and secure interactions within each layer. FAWG has established a methodical procedure applicable across all thrusts to create documentation using a common semantic basis. Later, the team developed a document of the functional system architecture with distinguished hardware/software components that has multiple levels of detail and a hierarchical structure. This has been helpful in establishing close and effective integration between the various thrusts.

A shared web portal was developed for FAWG documentation, starting in year 9. The team created Git Repositories for GEH implementation, and also developed web-based simulations that included several use cases for demonstrating the FREEDM Grid functionalities. The web portal continues to be populated with new information as the research activities continue. The information is presented at a high level and includes references to detailed team reports and publications at a lower level. It is expected that the portal will continue to be highly relevant after the ERC has graduated from under the NSF umbrella.

The web-based simulation portal is a key component that facilitates the education of power electronics. It contains simulation models and application examples for the major power electronics device in FREEDM systems - the SST, DESD, and DRER. These are accessible to students and researchers at any time via the web and are highly effective in clarifying operating and application principles of the FREEDM grid.

System Cost/Benefit Analysis

Cost-Benefit Analysis (CBA) was originally proposed by the FREEDM ERC team as a means of estimating the commercial value and relative utility of new Grid technologies and has subsequently been used to evaluate several innovations. The approach, which approximates existing practice, involved an analysis of each innovation by a sequence of three teams who produced: (1) a system analysis to determine the system benefits, (2) an economic analysis to estimate the monetary benefit corresponding to the system benefit, and (3) an analysis to estimate the statistics associated with the estimated benefit. A working group from industry provided data and information for this analysis process. This activity occurred primarily in Years 8-10, after the key technology component developments were sufficiently well defined. The detailed methodology for three FREEDM innovations is outlined in Section 2.5.4 of the Year 10 report.

Case 1: Distributed Energy Resources (DER) may become an issue for conventional grids when new commercial or residential grown has a much higher penetration of renewable energy than historical developments, and this might be addressed by adding new feeders (using solid state transformers, SST) based on smart grid technology. The costs are dominated by the SST subsystem costs, whereas the benefits may include system savings (not dispatching new generating capacity), avoiding widespread grid upgrades using conventional technology. The net present value (NPV) method was used
to estimate annualized benefits of using SST, and these were used to estimate the discounted payback period (DPBP), which turned out to be 2.9 yr., 1.6 yr., and 4 yr. respectively.

Case 2: Alternate technologies were evaluated for the situation of Case 1 above, to show that SST was potentially better than other existing technology solutions. An in-line power regulator (IPR) as an “edge-of-grid” device, and a smart inverter (STI) were evaluated. In summary, the discounted payback period for SST was 3.2 yr., for IPR was 3.4 yr, and for SMI was 4.4 years, suggesting that the SST would be attractive.

Case 3: DC Service for Residential Customers. The SST is capable of generating DC as well as AC outputs, and in this scenario the relative benefits of going to DC instead of AC for residential power were evaluated. This analysis has been described in a publication (Sun, Lubkeman, and Baran, 2018, Yr 10 report ref. [4], p. 76).

Fast-charging of electric vehicles using DC power (EV) was also evaluated on the basis of a similar analysis. Most of these cases were evaluated using spreadsheets, with all resulting in discounted payback periods. In this case, the ownership of the fast chargers (utility vs. customer, vs. gas stations) was also evaluated. The payback appeared very favorable to Fast Charger application, attracting more attention to this “spin-off” application.

While the actual technical evaluation approaches used in each case were different, since they required assumptions about what the costs of the existing systems would be, and how they would respond to a need for innovation, the strategy was similar in each case, and payback estimates could be done by one team. These analyses did confirm the economic attractiveness of the SST in different applications. These results represent crude estimates, and other factors such as vendor viability, reliability, availability of alternate suppliers, and accuracy of cost estimates, would need to be evaluated in more realistic circumstances.

For the purposes of this research, the CBA work represents a realistic approximation to methods used by industry (and sometimes by venture capitalists) for initial evaluation of new technologies. The CBA strategy has been shown to apply to multiple situations. In later years, the team involved an economist to assist with the broader issues in evaluating technology alternatives to formulate and resolve new technology alternatives. It also extended the methodology to include a probabilistic cost benefit analysis (cf. Year 10 report, Section 2.5.8) based on the Kaldor-Hicks criterion for choice in the presence of uncertainty. This begins to address multidisciplinary (economic, psychological) research issues, even though these were not the primary focus of this ERC.

The cost benefit analyses carried out for the FREEDM ERC has provided a very good starting point for new research in tradeoff studies to prioritize and monetize estimates of the value of new Smart Grid Technologies. They have suggested means by which the value of certain technologies, such as SST, may considerably exceed initial estimates as new uses for the technology are discovered. Even the initial studies have given rise to a reassessment of a new product introduction strategy.

The area of CBA for new Smart Grid devices seems worthy of further development in its own right. Seven publications are given in the Year 10 report (Section 2.5.9). It is indeed a cross-cutting technology.
(4) Research Thrust (Testbeds)

Testbed 1: Large Scale Simulation

The large-scale system simulation (LSSS) testbed is aimed at providing a simulation platform to test and validate Center-developed concepts on large-scale power systems with high penetration of renewable resources. Though a formal definition of scale is missing, a large-scale system is understood to consist of hundreds of buses, sources, and loads. The activities thus far have developed control and optimization methods, both at the local (device) level and at a system level aimed at assessing control performance, understanding component interactions, system dynamics, and protection. The activities complement the other testbeds (HIL and GEH) while supporting the Center’s vision to validate concepts at the large scale.

The research had enabled the Center to study the behavior of distribution power systems with a large number of SSTs. An interesting feature in emerging power systems is that the inclusion of a large number of power electronic devices with fast switching dynamics can adversely impact stability and control in ways that are not clearly understood. The LSSS testbed precisely allows the study and mitigation of such phenomena. For example, harmonic resonance could induce the potential for instability when SSTs are energized in distribution systems. The group’s activities have helped remediate this issue by designing a suitable input filter. This is a good example of how jointly advancing the scope of research from other groups within the Center. Another example is the demonstration of online Volt/VAR control for distribution systems with SSTs. This is a core operational component used routinely by several utilities. The testbed clearly helps demonstrate how these functions can be achieved when Center-developed components are integrated into future power systems. Besides these routine applications, the group has also examined how dynamic simulations could be conducted when a multiple SSTs are hosted in the grid. This task is non-trivial as power electronics-based simulations are often in the time domain. Research from this thrust area has proposed an interesting alternative - by developing dynamic phasor-based models for SSTs implemented by Dynamic Linked Libraries (DLL). The proposed approach has been validated with commercial solvers and tools such as OpenDSS and ElectroMagnetic Transients (EMT)-type simulations in PLECS. This project is a good example of synergy between power systems and power electronics researchers. The group has also stretched the application to larger systems - the IEEE 8500 bus feeder system, though the case study only covers a fault simulation. The extensions and applicability, especially dynamic simulations in (truly) large systems is a challenging problem and the testbed might help the Center catalyze research in this area post-graduation. Research findings from this thrust area are aptly interdisciplinary and appear in high quality publications.

The quality of the work thus far, the researchers involved, and the contributions towards the overall vision are real strengths while fundamental theoretical challenges (true dynamic simulations with several thousands of state variables) stemming from a multitude of SST-type devices, limiting the scope of studies only to smaller systems might project as awesomeness.

Testbed 2: Hardware in the Loop

Hardware in the Loop (HIL) testbeds have frequently been used within the power industry to validate and verify components that must operate in real-time. Such test beds may take two forms: (a) where
a large real-time system is used to test a simulated component, and (b) where a real-time system simulation is used to test a new hardware component. In either case, the simulated portion of the system must be made to run in real time (a real-time simulator) in order to provide accurate reflection of dynamic (and feedback) effects within the overall testbed. Within the ERC, the HIL Testbed uses primarily type (b) configuration, where a real-time simulation of the power system is used with to verify the correct operation of prototype Smart Grid hardware.

The FREEDM HIL Simulator uses state-of-the-art simulation technology, including embedded real-time processors and software (RTDS—Real-Time Digital Power System Simulator, OPAL-RT Real-Time Solutions), and has been used to verify, validate, and in some cases develop several Smart Grid component technologies such as the Digital Grid Interconnect (DGI), and Medium Voltage AC and DC devices (MVAC, MVDS). The evolution of the HIL and its uses over the course of the FREEDM research efforts is described in Section 2.3.2 of the Year 10 report. The FREEDM HIL Simulator differs from many other HIL Simulators in that it has been developed and used over a long period of time (10 years), that it has been used and modified to validate several Smart Grid component technologies, and that its network architecture has also been modified to include a larger number of signals passed between components as it has evolved (for example as of year 8, there were up to 240 real-time signals at a 240 Hz update rate). In this regard some of its capabilities are relatively unique, even within the power industry.

Although it has primarily been an enabler for the development of new Smart Grid component technologies, this system has been an important research aid for refining component requirements, for improving algorithms (DGI, Volt-Var), for component design verification (including multiple interacting components or subsystems), and for quantifying and displaying results of simulated performance of new technologies. The difficulty of developing, maintaining, and validating accurate real-time system simulations should not be under-estimated, particularly where feedback interactions occur between the simulated subsystem and components, and within a network of components. The HIL Testbed has several unique capabilities and has also attracted attention from industry as a possible means for early development or verification of new product ideas.

In the context of the FREEDM ERC the HIL Simulator has also been a vehicle for multiple groups, including student teams at both NCSU and FSU-FAMU, to collaborate. In earlier years, multiple students participated in hardware and software development of the HIL itself. Remote access capability was added in Year 7. Real-time embedded system programming skills have developed within the student body and have been a mentoring interest among high school and undergraduate student groups. Thus, the HIL has played a significant role, in its own right, in the evolution of Smart Grid concepts within the FREEDM team.

Testbeds such as the HIL testbed are often incidental to publications, but 5 publications based on the testbed design are noted in Section 2.3.6 of the Year 10 report. The HIL should be cited as a strength of the FREEDM ERC, and it can continue to be of use to undergraduate and graduate students, as well as industrial partners, for several years to come. Development of the HIL testbed can continue and its functions can be further expanded, e.g., for evaluating cyber-physical system security.

**Testbed 3: Green Energy Hub**
At the start of Year 4 the Green Energy Hub (GEH) test bed was one of three that were defined based on feedback from the site visit team and a better understanding of the needs to demonstrate the functionality of the overall FREEDM system. The objective was for the GEH to provide a clear architecture and experimental validation platform of how the FREEDM distribution system can transition from the laboratory setup to field deployment. Along with the other two defined test beds, the GEH was up and running by year 5 under the very capable direction of Dr. David Lubkeman.

During the first few years of operation, the focus of the Green Energy Hub test bed was on the testing and demonstration of the FREEDM component building blocks. In later years the focus was expanded to include projects with a broader systems focus such as multi-SST applications with an emphasis on energy management. Year 10 activities included projects involving a multi-SST testbed, single-SST residential demonstration, integration of integrated power management (IPM) and integrated energy management (IEM) applications and a demonstration of multi-SST islanding and black start operation. All of these projects have shown an integration between research efforts and results across the center. The Center’s prior attention over the years to systems engineering, the development of use cases, and the formation of the FREEDM Architecture Working Group has contributed directly to the ability to successfully integrate hardware components and control algorithms from research results across the center. While there is more work to be done to fully implement and demonstrate all of the envisioned features of the FREEDM system, and to fully integrate the results from all of the fundamental research work (particularly the post-silicon devices), the work to date on the GEH is excellent. The capability of the GEH to provide a unique learning environment for students to demonstrate principles associated with the development of a grid system that will support renewable energy sources is also significant. In addition, the students are exposed to systems engineering concepts that enable the overall operation.

In addition, the GEH testbed has drawn industry interest over the years. An ABB fast charger was installed as part of the GEH to study the impact of fast vehicle charging on the grid. Another center member company, Eaton Corp., has used the GEH to test one of their high power uninterruptible power systems (UPS) systems that they have donated to the center. Schneider Electric, a large electrical equipment manufacturer and a FREEDM member, used the GEH as a flexible testing space that included medium voltage power, solar PV, battery storage, and inductive and resistive loads to test a new microgrid management system. This microgrid management system is now branded as EcoStruxure and is a leading product line within the company.

The GEH offers an opportunity to continue to closely engage with industry as a useful test bed to test new smart grid concepts and potentially generate revenue as a test facility.
(5) Education/Educational Outreach

University Education Program
The Center provides strong and dedicated educational programs at both the undergraduate and graduate levels, as well as significant educational programs for pre-college students. Students continue to fare well in terms of job placement. Many courses have been developed in the Center, and there is a healthy culture of sharing of courses among the partner institutions. In addition to courses, the Center provides various research opportunities for undergraduates including a Research Experiences for Undergraduates (REU) program at each institution and an Undergraduate Research Scholars program for academic year research experiences. Students are proactively involved in advancing their education through special programs that are led through the Student Leadership Council (SLC), and students share best practices in these and other activities across member institutions. The SLC is also represented in regularly held leadership team meetings. The Center recognizes that the desired ratio of 2:1 graduate to undergraduate is not yet met and is working toward reducing the current ratio of 4:1 toward this target. The ERC engages in significant educational outreach efforts, with some 460 students and 260 teachers attending such activities in 2017, and only three quarters through 2018 already 500 students and 150 teachers attending such activities so far this year. Although some information was presented on assessment of education and outreach efforts, the Center still has limited resources for preparing detailed assessments.

Pre-College Education Program
The pre-college education program includes several components: a Research Experiences for Teachers (RET) program, a Young Scholars program, the Sustainable Transportation Education Program (STEP), and the Kenan Fellows program. In the early years of the Center, all five sites offered the pre-college educational programs. However, starting in Year 7, the pre-college activities were limited to NCSU and ASU due to budget limitations. The pre-college program in year 10 included three Research Experiences for Teachers participants, two Young Scholars at NCSU and seven at ASU, and a Kenan Fellow who is a high school teacher in engineering education.

The Center integrates university education and pre-college activities where possible. REU students often work closely with teachers and Young Scholars, and Ph.D. students often serve as mentors. In year 10, the Center started a Friday afternoon program taught by a Center PhD student that provided modules and labs for REUs and pre-college participants on topics such as simple circuits, wide bandgap power electronics, electric vehicles, Matlab, and Solidworks, to enhance participants’ capability to contribute to Center research projects.

The Sustainable Transportation Education Program (STEP) is a rather unique activity hosted at NCSU (but offered to all FREEDM participating universities) that aims to educate middle and high school students about sustainable transportation and the shift toward the electrification of transportation. Teachers learn about wide bandgap devices and their applications. The program includes a hands-on component using radio control electric vehicles, with students learning about battery technologies, power train, chassis design, and other related topics. A teachers’ workshop and a competition is held annually. In Year 10, there were 12 schools and 125 participants in the competition.

The Center Education Director also serves on two high school business advisory boards, which provides an additional opportunity to reach the pre-college community about FREEDM research.
The year 10 annual report provides a limited amount of information on assessment techniques and outcomes of the Center’s educational programs. However, the report did note that feedback from year 9 resulted in adding additional training in year 10 on conducting literature reviews, as well as in a Friday afternoon lab that taught basic skills.

**Response:** We apologize for the omission of the assessment details on FREEDM education program. The following is reported to augment the year 10 annual report on education:

The Education program revamped FREEDM’s assessment program in 2016 as recommended by the NSF Site Visit team. In addition to using indirect assessment for pre-college, REU, UGRS, and graduate programs, we developed a direct assessment for courses and programs. There is funding to support the Education Director’s position and a Graduate Assistant for the Education program so they will continue to collect, analyze, and interpret the data along with writing reports. The assessment will continue to be used to review and enhance programs along with individual students and teachers to ensure impact and success.

The FREEDM System Center’s assessment program is a strategy to meet the ERC Gen-3 education requirement. Systematic planning and effective implementation strategies are required to be effective. The Center has had an indirect assessment plan in place for eight years that involves students’ self-reporting and in Year seven the NSF Site Visit recommended that the Center develop a direct assessment program for measuring students’ desired skillsets to ensure our students are meeting the critical workforce needs to prepare them to have the skills of a global engineer.

Two pilot programs were implemented in 2015 and 2016 which included direct assessment with the REUs during the summer program and a graduate research laboratory cohort training program for new students entering the Center.

The objectives for graduate students in the Center developing skillsets in the following areas:

1. Define, formulate, and solve problems related to power and energy systems.
2. Design a power energy system or some of its components.
3. Demonstrate an understanding of professional and ethical responsibility.
4. Strengthen understanding of innovation, professionalism, and ethical standards.
5. Develop the needed knowledge, skills and experiences in the areas of renewable energy, energy storage, and power semiconductors.
6. Increase global preparedness and innovation/creativity.
7. Problem solving skills
8. Communication skills
9. Design skills
10. Modeling skills

**Graduate College Education**

**Background:** The assessment program is a strategy to meet the ERC Gen-3 education requirement. Systematic planning and effective implementation strategies are required to be effective. The proposed skill-sets are based on NSF requirements, the National Academy of Engineering’s Engineer of 2020 recommendations, and discussion with industry members.
Methodology: The strategic plan includes both direct and indirect assessment, artifacts collected from project-based learning and experiences, professional skills training, and self-reporting through surveys based on the NAE Global Engineer of 2020. Artifacts from project-based learning courses will be collected from the student’s faculty adviser to further demonstrate the student’s competency in the technical area(s).

To implement the assessment program effectively and train students to be creative and innovative, FREEDM integrates industry and research seminars, webinars, meetings, and workshops into its graduate education programs. These activities provide students with industrial practice knowledge that assists their career development. FREEDM offers a series of seminars related to intellectual property law and entrepreneurship and innovation. Additional industrial practice puts students in contact with practicing engineers who have worked in the industry in the U.S., Asia, and Europe and exposes them to interdisciplinary approaches to energy policy and regulations.

Impact/benefits: The purpose of this program is to augment graduate students’ technical education and research with training to be successful in a global environment. It will benefit the industry and society as a whole by training students to be creative, adaptive, and innovative before entering the workplace. In other words, participating in the program will develop students who have professional and technical skills prepared to enter the workforce.

Undergraduate Research Scholars’ Program

Methodology: The strategic plan includes both direct and indirect assessment through meetings, rubrics, focus groups, and self-reporting. All UGRS students participating in the FREEDM program receive a plan with detailed components to be completed and are expected to meet with the education director monthly. Students are expected to gain experience working in a team-based research environment, be exposed to professional development opportunities and industry networking, and complete an engineering ethics course. A rubric will be developed to evaluate each student’s progress. Faculty and graduate mentors will develop learning objectives for the UGRS’s projects and conduct assessment through observation and/or test(s).

Impact/benefits: The purpose of this program is to provide a research experience along with the professional skills for undergraduates pursuing a degree in Electrical and Computer Engineering. The students in this program are introduced to graduate school opportunities. UGRS students participating in the program will assist in the development of their professional and technical skills.

Research Experience for Undergraduates

Methodology: The strategic plan includes both direct and indirect assessment through meetings, rubrics, and self-reporting. All UGRS students participating in the FREEDM program receive a plan with detailed components to be completed and are expected to meet with the education director monthly. Students are expected to gain experience working in a team-based research environment, be exposed to professional development opportunities and industry networking, and complete an engineering ethics course. A rubric will be developed to evaluate each student’s progress. Faculty and graduate mentors will develop learning objectives for the UGRS’s projects and conduct assessment through observation and/or test(s).

Impact/benefits: The purpose of this program is to provide a research experience along with the
professional skills for undergraduates pursuing a degree in Electrical and Computer Engineering. The students in this program are introduced to graduate school opportunities. UGRS students participating in the program will assist in the development of their professional and technical skills.

Pre-College Programs

**Methodology:** The strategic plan includes both direct and indirect assessment through rubrics, artifacts, and pre and post surveys of the students’ learning experience and knowledge as a participant in the program. The Young Scholar’s program is a six-week program for selected high school students to provide an immersive experience working in lab, learning about engineering concepts, design, working on a research project, and poster. Students will develop one project to present after their four-week experience and are encouraged to present at one event at their school or community. The Research Experience for Teachers is also a six-week program where selected middle and high school teachers who will work in lab setting to learn about engineering education, working on a selected project, presenting their research findings, and developing curriculum, a presentation, and assessment to deliver to their students and other teachers.

**Impact/benefits:** The purpose of this program is to create awareness about STEM and develop skills through curriculum and engineering activities for the pre-college participants. Students and teachers will be involved in learning about engineering concepts, hands-on activities, attending webinars, and going on industry visits to ensure that they are exposed to multiple opportunities to learn about the field of engineering, skills, and careers.

(6) Innovation Ecosystem

The Innovation Ecosystem, in the context of an ERC, refers to the collection of stakeholders who will participate in bringing an initial innovation (e.g., as expressed in the form of a patent) into the market as a new product. These might include the end user, a venture capitalist, a large business with related products, a small start-up company, suppliers of materials, or those with other potential uses for the innovation. One goal of the ERC is to interact with these stakeholders at an early stage, to continue to seek their inputs in developing the innovation, with the hope that ultimately these stakeholders will invest in bringing the innovation to market. It has been estimated that an innovation must clear about 20 critical hurdles to get to market, so this is a long and complicated process that is successfully completed only for a small percentage of innovations. Experience has shown that early involvement of stakeholders in the innovation process greatly improves the chances of success (say, from 1% to 5%).

The FREEDM ERC made an effective effort to build a strong Innovation Ecosystem and has had many successes. At a very early stage the Center started with an Industrial Advisory Board (IAB) and began to solicit members of an industrial partner group, now also affiliated with PowerAmerica. The partner group included many small companies at the beginning, some of whom were interested in patent rights. By the middle years of the ERC, it became apparent that many publications, patents, and graduates were being produced. As time passed, more and larger “partner” members, including Duke Energy, ABB, and the New York Power Authority joined the collaboration: these members have more interest in hiring students and in sponsoring FREEDM projects. This evolution, over a 10-year period, seems likely to occur in other Innovation Ecosystems that affiliate with other ERC efforts. Continued management attention will be required to extend the adaptive agility that has led to the success achieved to date forward into the years beyond the initial years with NSF support. This
might include re-approaching earlier member candidates, inviting new groups from within the ecosystem (e.g., standards or testing organizations), or cooperative work-study arrangements with students and prospective employers.

This ERC has attracted a robust group of members from industry and academic affiliates who have been actively engaged in many aspects of the Center’s research. Financial support from these members has been respectable, but it must grow in order to at least partially compensate for the ending of NSF ERC program funding. The FREEDM management team has worked to develop a strategy for increasing this support, but it is not yet fully in place – though some short-term commitments are in hand, as described elsewhere in the report.

With over 100 inventions, 50 patents, and over 20 licenses, several successful technology transfers have occurred in the course of the FREEDM initiative, including 10 start-up companies, the Gridbridge SST system, and Bing Energy. This is an excellent track record. With a relatively large innovation ecosystem and a huge and utility industry to engage with, there is every reason to believe that this team can remain to be successful in the future.
(7) Infrastructure

(a) Configuration & Leadership

While several of the original members of the leadership team have moved on to other positions, the Center graduates with a very capable team in charge. The leadership team recognizes the challenges in remaining as a multi-institutional Center post-NSF support, but is committed to pursuing opportunities as they arise. They will continue to work together on projects related to CREDENCE and to integrating the Gen-IV version of the SSTs into the GEH during the no-cost extension period.

Due to other large grants at the Center, the positions of Education Director and Diversity Director have support from additional sources beyond the Center. In particular, the Education Director position will work for the PowerAmerica program along with continuing her work with the FREEDM Center. The Diversity Director will work with the ASSIST ERC as well as the FREEDM ERC. The sharing of these positions provides a synergistic opportunity to leverage lessons learned from all the programs and share best practices while sharing resources. The REU program will be shared between the ASSIST and FREEDM ERCs and this offers the students the opportunity to explore power device concepts at the nano-watt scale (ASSIST) to the mega-watt scale (FREEDM).

The Student Leadership Council (SLC) seems well-organized and positioned to continue post-graduation. They have applied to be recognized as a student organization on the NCSU campus, and this will result in a modest amount of funding for the SLC. Notably, they recognized a need for additional training in the area of Digital Signal Processing (DSP) programming and organized a workshop with an instructor around that topic to help the students. This was an excellent example of how the SLC can support the needs of the Center and the SLC is planning additional workshops to meet needs as identified by students in the future.

(b) Diversity Strategy and Impact

The ERC set forth three objectives for its diversity strategy:

Objective #1: Recruit and retain a graduate student population that is richly diverse and exceeds the national average demographic composition of comparable engineering-based programs.

Objective #2: Attain faculty and staff representation that better reflects the diversity of the general population.

Objective #3: Maintain an environment that makes FREEDM an attractive place for all people to work and grow professionally.

The ERC also adopted the "culture of inclusion" ideals that were developed in the NSF strategic plan after the inception of the Center. The Center Diversity Director, Dr. Roy Charles, also serves as the Diversity Director for the ASSIST ERC, which is also head-quartered at NCSU. This dual role allows Dr. Charles to pass best-practices between the Centers, and also to leverage recruitment efforts to encompass both centers.

The Center is working to increase connections to various campuses with a high number of traditionally underrepresented minority student populations with campus visits and recruitment
efforts. The Center is also engaging with national organizations such as National Society of Black Engineers, Society of Hispanic Professional Engineers, Society of Women Engineers, and the American Indian Science and Engineering Society in order to create a more diverse pipeline of students for the ERC. In addition to recruitment activities, the Center offered training on accessibility for persons with disabilities, and on Non-Discrimination and Title X issues.

The percentage of women students participating in the ERC is generally less than national or ERC averages. FREEDM reports 16% of its graduate population and 35% of its undergraduate population as female but the average ERC reports 33% and 44% respectively, and national averages are 27% and 23% respectively. However, it should be noted that electrical engineering is a traditionally underrepresented field of study for women and the ERC has generally increased its participation by women, particularly in the last three years of the Center.

For Hispanics, the participation numbers for both graduate and undergraduate students exceed the national and ERC averages. FREEDM reports 12% of its graduate population and 21% of its undergraduate population as Hispanic while the average ERC reports 11% and 15% respectively, and national averages are 10% and 15% respectively.

For underrepresented racial minorities, the results are mixed, with the FREEDM center exceeding ERC and national averages for graduate students but coming in slightly below ERC averages for undergraduates (although still exceeding national averages). FREEDM reports 12% of its graduate population and 14% of its undergraduate population as Hispanic while the average ERC reports 9% and 17% respectively, and national averages are 6% and 6% respectively.

(c) Management Effort

The Center has a strong management team that has deep involvement in all aspects of the Center’s work, including its efforts in research, education and outreach. The Center management is prudent in financial management, in securing institutional support, and in helping to guide the research of the faculty and students in directions that are likely to maintain strength and visibility into the future. The Center Director in particular is to be commended for flexibility and responsiveness to the Site Visit Team’s requests aimed at achieving a balance in the Center’s research between component and systems level research. The central management of the ERC has coordinated well with management at the member institutions, and this has led to a strong and complementary working relationship among the partner institutions, allowing for shared resources including laboratories and educational materials.

(d) Sustainability

At this post-graduation juncture, a main issue is sustainability of the FREEDM Center in its current form without NSF funding as an ERC. The Center has obtained commitments of support for some aspects of its activities, including a two-year commitment from NCSU to support the Center facilities. Also, the member universities have over the past decade provided additional faculty lines in the power area. The Center brings in significant research funding besides the original NSF Center grant that totals three times the previous NSF base funding. Other sources of support include an endowment and industry membership fees. The Center management has put together a plan for sustainability. The SVT feels that to succeed in sustaining the Center in its present form with its current spectrum of
activities, the Center management team needs to take further major and creative pro-active steps. The FREEDM Center has many significant and rather unique capabilities and strengths which could be leveraged to achieve sustained external sources of support. This could include providing a services center for industry that could engage students and faculty in project work on a contract basis with member companies, providing for visiting opportunities for member company engineers and scientists, short courses, access to students, access to software, and so on. The Center’s management is also encouraged to seek mechanisms and incentives for all member universities to remain engaged in the Center and continue pursuing significant team efforts in the future.

(e) Resources & University Commitment

The FREEDM Center has enjoyed strong support and commitment from all partner university administrations, including provision of space, hiring of faculty and other financial support for Center activities. Both NCSU and ASU saw their faculty numbers approximately double in the power area since 2008. NCSU is providing excellent facilities to house the Center’s activities. FAMU-FSU has hired 5 new faculty in Fall 2018 in cyber physical systems and controls, as well as a distinguished senior faculty member in power electronics from Michigan State University, Prof. Fang Peng. FAMU-FSU has also confirmed plans for building a 12,000 square foot laboratory for Center-related activities. At Missouri S&T, a 1,750 square foot addition to the Power Systems Laboratory occurred as a result of the university’s involvement in the FREEDM Center.

The Center has a strong group of partner companies. This contributes important discretionary funds to the Center. As mentioned elsewhere in the report, the SVT believes that the industry support base for FREEDM can be strengthened through creative development of additional services and opportunities for a larger group of potential member companies.
Designation of Time Limited Option for Distinguished Professorships

**Background:** Donors who endow a distinguished professorship at NC State University may elect to pursue matching funds available through the state’s Distinguished Professors Endowment Trust Fund (DPETF). In accordance with state statutes, as well as University of North Carolina system and NC State University policies, the NC State University Board of Trustees (BoT) is authorized to designate that endowed distinguished professorships seeking DPETF matching funds may be time limited.

We request this designation from the BoT when a donor agreement indicates intent that a distinguished professorship be awarded, or potentially awarded, at a rank other than professor (i.e. assistant, associate professor) and/or for a period other than an individual’s full career.

This designation provides the university with the maximum flexibility in awarding the distinguished professorship over time. Still, the overwhelming majority of NC State’s distinguished professorships are offered to professors for the duration of their career at NC State.

**Recommended Action:** We request designation of the following distinguished professorships which may be time limited:

1. Blanton J. Whitmire Distinguished Professorship, College of Agriculture and Life Sciences, $1.5M endowment
2. Charles G. Wright Distinguished Professorship, College of Agriculture and Life Sciences, $1.5M endowment

**Policy References:**
- [UNC Policy 600.2.3 - Distinguished Professors Endowment Trust Fund](#)
- [NCSU Policy 01.05.01 – Board of Trustees Bylaws](#)
- [NCSU Regulation 05.20.17 – Professorships of Distinction](#)
REPORTS
ENROLLMENT 2025

Board of Trustees Enrollment Update

Presented by Louis Hunt
2025 Enrollment Plan Goals

Enrollment History 1885 - 2025

Source: data.emas.ncsu.edu
2025 Enrollment Plan Goals

- Enhance student success
- Enhance diversity
- Establish manageable growth pattern by improving planning process to reduce “volatility” in enrollment growth
- Ensure access for North Carolinians to unique programs in UNC system, while emphasizing competitive excellence
- Increase global engagement
# 2025 Enrollment Plan Goals

<table>
<thead>
<tr>
<th>NEW</th>
<th>TOTAL</th>
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<tbody>
<tr>
<td>+ 8.00% Freshmen</td>
<td>+ 11.7% Undergraduate</td>
</tr>
<tr>
<td>+ 51.8% Transfers</td>
<td>+ 141.3% Certificates</td>
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<tr>
<td>+ 30.4% Master’s</td>
<td>+ 25.2% Master’s</td>
</tr>
<tr>
<td>+ 51.8% Doctoral</td>
<td>+ 28.4% Doctoral</td>
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<tr>
<td>0% DVM</td>
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**+13.8%** Total Enrollment Growth
2025 Enrollment Plan Goals

Fall Enrollment History 2009-2019

Total Enrollment by Career

Total 2025 Enrollment Target
38,700

Fall 2019 Enrollment
36,290

Source: data.emas.ncsu.edu
Undergraduate Enrollment Trend

Source: data.emas.ncsu.edu as of August 19, 2019
Graduate Enrollment Trend

Graduate Enrollment

- Masters
- PhD

Source: data.emas.ncsu.edu as of August 19, 2019
Undergraduate Enrollment Funnel
Applications - Freshmen

Freshmen Applications

Source: data.emas.ncsu.edu as of August 19, 2019
Undergraduate Enrollment Funnel
Admitted - Freshmen

Source: data.emas.ncsu.edu as of August 19, 2019
Undergraduate Enrollment Funnel

Enrolled/Will Enter - Freshmen

Freshmen

Source: data.emas.ncsu.edu as of August 19, 2019
## Academic Profile

### Enrolled - Freshmen

<table>
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<tr>
<th>Metric</th>
<th>Fall 2019</th>
<th>Average</th>
<th>Fall 2013</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ACT</strong></td>
<td>4.15 – 4.47</td>
<td>4.29</td>
<td>4.22 – 4.67</td>
<td>4.44</td>
</tr>
<tr>
<td><strong>Weighted GPA</strong></td>
<td>3.69 – 3.96</td>
<td>3.80</td>
<td>3.5 – 3.88</td>
<td>3.68</td>
</tr>
<tr>
<td><strong>Unweighted GPA</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Rank in class</strong></td>
<td>4.7% – 18.8%</td>
<td>13.2%</td>
<td>4.7% – 17.6%</td>
<td>12.7%</td>
</tr>
<tr>
<td><strong>SAT Evidence-Based Reading &amp; Writing and Math</strong></td>
<td>1270 – 1410</td>
<td>1337</td>
<td>1180 – 1310</td>
<td>1240</td>
</tr>
<tr>
<td><strong>ACT Composite</strong></td>
<td>27 – 32</td>
<td>29.3</td>
<td>26 – 30</td>
<td>28</td>
</tr>
</tbody>
</table>

- **29.3** average ACT
- **77%** Top 20% of HS Class
- **1337** average SAT
- **49.7%** Top 10% of HS Class
- **4.29** average GPA (weighted)
- **3.80** average GPA (unweighted)

Source: data.emas.ncsu.edu as of August 19, 2019
Demographic Trends

Enrolled - Freshmen

- 50.3% Female
- 31.3% Non-White students

- 654 Students from outside North Carolina
- 258 Black or African American
- 29 Native American
- 1136 Different high schools represented
- 292 Hispanic
- 2 Hawaiian / Pacific Islander
- 1470 Students from rural North Carolina counties
- 392 Asian
- 2 Non-Resident Alien
- 518 First generation college-bound students
- 188 Multiracial
- 189 Unreported

Source: data.emas.ncsu.edu as of August 19, 2019
Efforts to Shape the Class and Enhance Student Success

2020 Spring Connect

**Students from rural North Carolina counties**

- **UC**: 20.0%
- **TEX**: 3.4%
- **MGMT**: 14.2%
- **COS**: 14.5%
- **CNR**: 4.3%
- **CHASS**: 22.2%
- **CED**: 4.0%
- **CALS**: 17.5%

**2020 Spring Connect by Race**

- **Two or more races**: 5.85%
- **White**: 67.69%
- **Black or African American**: 8.31%
- **Asian**: 4.92%
- **American Indian or Alaskan…**: 0.31%
- **Hispanic**: 9.85%
- **Race and Ethnicity Unknown**: 3.08%

Source: data.emas.ncsu.edu as of August 19, 2019
Undergraduate Enrollment Funnel

Applications - Transfer

Source: data.emas.ncsu.edu as of August 19, 2019

Enrollment Management and Services
Undergraduate Enrollment Funnel
Admitted - Transfer

Transfer

Admit Rate

34.3% 33.5% 39.0% 38.7% 45.2% 35.3% 42.0% 42.9% 42.7% 43.8%

Total Admitted

Source: data.emas.ncsu.edu as of August 19, 2019
Undergraduate Enrollment Funnel

Enrolled/Will Enter - Transfer

Transfer Enrolled

Source: data.emas.ncsu.edu as of August 19, 2019
Academic Profile

Enrolled - Transfer

Average GPA by College

<table>
<thead>
<tr>
<th>GPA</th>
<th>College</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.30</td>
<td>Agriculture &amp; Life Sciences</td>
</tr>
<tr>
<td>3.33</td>
<td>Design</td>
</tr>
<tr>
<td>3.37</td>
<td>Education</td>
</tr>
<tr>
<td>3.59</td>
<td>Engineering</td>
</tr>
<tr>
<td>3.33</td>
<td>Humanities &amp; Social Sciences</td>
</tr>
<tr>
<td>3.60</td>
<td>Management</td>
</tr>
<tr>
<td>3.29</td>
<td>Natural Resources</td>
</tr>
<tr>
<td>3.42</td>
<td>Sciences</td>
</tr>
<tr>
<td>3.34</td>
<td>Textiles</td>
</tr>
</tbody>
</table>

Top 10 Programs

- Business Administration
- Psychology
- Mechanical Engineering
- Communication
- Biological Sciences
- Animal Science
- Computer Science
- Political Science
- Electrical Engineering
- Sport Management

3.43 average GPA
Demographic Trends
Enrolled - Transfer

56% Students from NC Community Colleges
36% Non-White
43% Female

- 109 Students from outside North Carolina
- 253 Different transfer schools represented
- 354 Students from rural North Carolina counties
- 186 First generation college-bound students
- 73 Black or African American
- 124 Hispanic
- 83 Asian
- 50 Multiracial
- 4 Native American
- 0 Hawaiian / Pacific Islander
- 56 Non-Resident Alien
- 72 Unreported
- 24 Dependents
- 50 Served in the Military
- 9 Active Duty
- 24 Dependents

Source: data.emas.ncsu.edu as of August 19, 2019
Efforts to Shape the Class and Enhance Student Success
Community College Collaboration (C3)
Student Success

Retention

One, Two and Three-Year Retention Rates
*Estimated Current Year Rates


Source: data.emas.ncsu.edu as of August 19, 2019
Student Success

Graduation

Four, Five and Six-Year Graduation Rates
*Estimated Current Year Rates

Source: data.emas.ncsu.edu as of August 19, 2019
AS OF AUGUST 16, 2019

ROTC Student Needs
Recognizing the need for improved parking for ROTC Students, we met with the ROTC Cadre from each branch and discussed the idea of extending the parking window for students who are required to be at Physical Training and ROTC class before 8am. We then met with Dr. Lisa Zapata, Interim Vice Chancellor, about this idea and were able to collaborate with parking to bring this to fruition. All branches of the ROTC now have a $10 parking pass available for the hours they are there when parking is enforced but their pass is not applicable. We also worked with Wellness and Recreation to open Miller Fields earlier for ROTC students to ensure they can complete their Physical Training and course on time.

Cultural Competency Training
We met with OIED to discuss the most impactful ways an online diversity competency training could be implemented at NC State. Working with OIED we decided that high impact practices would be the most effective way to implement a cultural competency training. Research led us to the University of Illinois at Urbana Champaign where we discovered their I-Connect series. This series is an interactive discussion required of incoming freshmen and transfer students, offered in the spring of each academic year where students can talk about shared experiences. We are currently reaching out to University of Illinois’ Diversity Department to do further research.

Respect the Pack
An annual event, Respect the Pack has been planned this year by our Director of Diversity Outreach, Zakiya Covington, and is set to occur on August 20, 2019 at 6pm. This year Director Covington has worked tirelessly to create a more welcoming and community environment by working with our Community Centers, including the GLBT Center, Women’s Center, African American Community Center, and Multicultural Student Affairs.

Prayer Space
Identifying a change in space, we worked with Campus Enterprises to move the Interfaith Prayer Space solely to Talley Student Union. Campus Enterprises will be monitoring traffic to
the space and we will be evaluating the need for a second space at the end of the Academic year.

Executive Officers 2019-2020

Emma Carter, Student Body President; Nicole Teague, Student Body Vice President; Mitchell Moravec, Student Senate President; Garrison Seitz, Student Body Treasurer; Kiera Jonson, Student Body Chief Justice

What have our members been up to?

Over the summer, our members have had internships, been able to travel and have gotten to build relationships with countless individuals from tech companies to political figures. Here are a few students who have been working hard this summer!

- Nicole Teague, Student Body Vice President
  - Nicole interned with JPMorgan Chase & Co. as a Technology & Reporting Intern where she able to create projects and present to senior leadership including the CEO of Consumer Banking, Thasunda Brown Duckett. At the end of her internship she also earned a full-time offer for after she graduates
- Daniel Mock- Director of Athletics
  - Daniel had an internship in Silicon Valley with Samsung. He served as a Software Engineering Intern.
- Jordan Clayborn- ASG Delegate
  - Jordan worked at a summer camp in Florida as a camp counselor, ropes course instructor, and CIT Program Director. He also went on a solo trip to New York.

Executive Branch Goals

As a branch with 10 Directors, we want to work together this year to build community and relationships here at NC State. Our directors have been working this summer to create and curate ideas and programs that relate to We promise to serve as allies to all students, connect the Student Body to Student Government, collaborate with students, administration, faculty, and staff through inclusive, sustainable efforts that can be continued beyond just this year.
Board of Trustees Report
August 20, 2019

The Faculty Senate report at the start of the academic year is always a bit unique, especially with a new Board of Trustees and a new Chair of the Faculty. The actions of the Senate since the last Trustees meeting were presided over by the Past Chair Carolyn Bird and this is being written before the Senate has begun its year. Nevertheless, the activity has been remarkable.

I am Hans Kellner, Chair for the 2019-2021 term. I was Chair once before, from 2011-2013, and I am the first to repeat in this position at NCState. Although I was a reluctant candidate, I hope to attack the job with what I have and to get some things accomplished. I believe in shared governance and have devoted a lot of time to it at several universities. What I have gotten from this service is a deep and broad picture of how a university works, both at levels above the faculty and below. The Faculty Senate is the ideal spot to see things whole. Even more gratifying -- and the best reason -- for running for the Senate -- are the relationships that grow from mixing people from many disciplines and regions of the campus. I'm happy to say, as I could say eight years ago, that we have in our chamber folks from 6 different continents -- as long as the Provost is in attendance.

That said, my principal goals at this point are to improve the Senate's physical condition and to attract more candidates for the body, especially for the top job. We have been in the same rooms in D.H. Hill Jr. Library since 1954 and we treasure them as historic and vital to the traditions of the faculty. But they need work. And we need to pay more attention to the history of our institution; it is remarkable and fascinating. Once the academic year begins, a torrent of issues can wash away goals and plans, but I intend to be persistent about bringing the Senate up to where it ought to be.
Because there are a number of new trustees, I shall recount the basics of the Faculty Senate, the one body representing all of the NCSU faculty, tenure-track and professional and emeritus. We are elected by colleges, weighted by size. The Senate is relatively small at 37 members, and we meet rather frequently -- every other Tuesday during the academic year, with committee meetings on alternate Tuesdays. (Compare that to Chapel Hill, with 90-odd members and monthly meetings.) Like the Board of Trustees, much Senate business is done in the four Senate standing committees, and the Senate is represented on all of the University Standing Committees and Advisory Committees that have such a major role in the development of university policy.

The Chair of the Faculty was for 45 years called the Chair of the Faculty Senate, elected by that body and serving for one year, until about 20 years ago it was decided that a longer term was necessary for the learning process and the growing job. Now the Chair signs up for a four-year commitment -- as Chair-elect, then two as Chair, then one more as Immediate Past Chair. And the Chair is elected by the General Faculty, no longer by the Senate -- hence the change of title. (By the way, the job of Chair, here and elsewhere, is also growing year by year. In Chapel Hill, the Chair of the Faculty Council recently stepped down with a year left in her term.)

The Chair of the Faculty represents the faculty in almost everything -- many committees, search committees, athletic and ceremonial events. At graduation, you Trustees will follow me as I carry the university mace (for your protection). As I write this in mid-August, the activity is in full swing. Since Chair Bird's last report to the Board, the Senate continued its inquiry into NCSU-sponsored child care, a perennial issue that becomes more important to faculty and staff every year. Interim Vice Chancellor Peloquin-Dodd and Human Resources head Marie Williams gave encouraging news about fresh arrangements and the future. The results of election for the Senate were announced, and Chair Bird earned praise for her successful effort at recruitment. We have a full Senate, and adequate membership for the important 603/607 pools that handle grievances and tenure hearing case (and are hard to fill).
The penultimate meeting in April was devoted mainly to athletics and academics, an important topic for the faculty. Joel Pawlak, the Faculty Athletic Representative, described the work of verifying eligibility for all student-athletes and maintaining relationships with coaches and staff.

Finally, the Senate presented a Resolution of Commendation to departing Athletic Director for upholding academic standards and supporting the teams of all the students as shown by our standing in the Director’s Cup. This is what the faculty cares about. At the second meeting of my first term as Chair in 2011, the new AD Yow said she would do these two things, and, on the whole, she has.

This meeting and the last one were also devoted to elections -- Athletics Council, Faculty Assembly, Senate Executive Committee -- all of them important to the university and the System. The Alumni Association presented the outgoing Chair with an NCState rocking chair, a valuable tradition.

Facing the first meeting of the 67th session of the Faculty Senate, we have already received seven Issues of Concern, most of which will be referred to one or another of the standing committees. It will be a busy and demanding year.
Agenda

NC STATE Staff Senate

Board of Trustees Report

August 12, 2019

Honorable Trustees,

The NC State Staff Senate is a communication conduit between NC State staff and university administration, receiving input from staff members while also providing staff with information and resources to help foster a welcoming, equitable, and inclusive work environment. As an advisory body to the university chancellor, the Staff Senate:

- provides feedback and consultation regarding interests/concerns that affect staff members;
- receives proposed policies or policy changes from the chancellor or other executive officers of the university for review, and makes recommendations on policies and regulations that affect staff members;
- initiates the consideration of new or review of existing policies and regulations affecting staff members, and offers informal suggestions or formal resolutions for changes or improvements;
- assists in the communication of issues and institutional activities affecting staff members;
- serves as the primary liaison between staff members and the chancellor, University Council, Board of Trustees, Chancellor’s Liaison Committee, Faculty Senate, Student Senate, and the UNC System Staff Assembly;
- represents SHRA and EHRA professional and support staff; and
- encourages a sense of community and engagement among all university employees by the promotion and facilitation of staff participation in the university community.

To successfully accomplish our mission, three skill sets are critical—leadership, communication, and collaboration. To that end, our late spring and summer activities have focused on enhancing these skills.

In April, Staff Senate hosted:

- A booth at Employee Appreciation Day in order to meet constituents and collect feedback, questions, and concerns. In order to collect a “swag” item, an employee needed to complete a comment card; the collected comments were compiled into a spreadsheet, enabling us to analyze the data and identify opportunities for action items.
- A table at Earth Fair, held on the Brickyard, a crossroads for all university constituents—students, staff, faculty, and community members. This event was used to build awareness of the environmental activities of Staff Senate’s Resources and Environment Committee (REC), and to sign people up for the Sustainability Partners listserv. Sustainability Partners, a partnership between REC and the University Sustainability Office, is a community of NC State employees and students (as well as community members) interested in sustainability on campus and beyond.
- Bike at Work lunchtime bike ride, in an effort to support Bike to Work Day while recognizing that not all employees can do so. This guided greenway ride was a collaboration among Staff Senate, Wellness and Recreation, Transportation, and City of Raleigh Department of Transportation.
make participation accessible to all those who wished to attend, individuals could “rent” a bicycle free of charge from WolfWheels. Participants were treated to end-of-ride snacks and bicycle swag such as lights and bells to encourage their continued, safe riding.

In May, we held our elections for officers and committee chairs. In the past, committee chairs were selected at the first meeting of the new term; this earlier election process facilitates greater organization and planning capabilities.

Also in May, NC State not only participated in but also co-hosted the UNC Staff Assembly Chancellors’ Cup Golf Tournament. Held at the Tobacco Road Golf Course in Sanford, the tournament raises money for the Janet B. Royster Memorial Staff Scholarship Fund, which provides monies for staff professional development opportunities (including academic degrees, certifications, and other continuing education). As a co-host, NC State provided tournament supplies and volunteers, some of whom woke up as early as 3:30 a.m. in order to help. In addition to the chancellor’s team placing third in the tournament, the NC State Staff Senate tent at hole 6 won “most spirited” (not only earning bragging rights, but also setting the bar quite high for next year’s tournament).

In June, after a four-year effort, we completed revisions to the Staff Senate bylaws, making them more reflective of who we represent, what we do, and how we do it; Chancellor Woodson approved the updated document on June 17.

At the end of the month, we held our kick-off retreat at the McKimmon Conference and Training Center. Marie Williams, associate vice chancellor for human resources and liaison between the chancellor and Staff Senate, shared greetings from Chancellor Woodson and made comments to guide us in the upcoming year. The retreat focused on creating engagement and the sharing of ideas. Stephanie Davis, Makeba Jackson, and Ann Davis, from Learning & Organization Development, led attendees in four interactive activities that demonstrated the principles of teamwork and communication. Extended periods were dedicated to meeting in districts and as committees, in order to strategize and plan. In support of the university’s sustainability plan, efforts were taken to make the retreat a zero waste event; staff senators also received reusable stainless steel drinking straws for their continued use.

During July, NC State delegates participated in the UNC System Staff Assembly meeting in Boone, where we received updates on the Clear Pricing Project, the budget, and state retirement plans, among other items. These topics were relayed to the NC State Staff Senate during our August meeting, at which we also heard from Erin Amari on Wolftime.

An additional focus of our discussions and activities for the year ahead is how we can be more inclusive of those staff whose voices may have historically been under-heard—specifically, extension, facilities, and housekeeping. The Staff Senate body is excited for the coming year.

Respectfully Submitted,

Janice Sitzes

Janice Sitzes, Ed.D.
Associate Director, Marketing Services, Continuing and Professional Education
Chair, NC State Staff Senate, 2019-2020
BOARD OF TRUSTEES
NORTH CAROLINA STATE UNIVERSITY

Executive Committee
September 13, 2019, 7:30 a.m.
Tom Cabaniss, Chair
Members: Clark, Goodnight, Kelly, Weisiger, Jr.

AGENDA

CALL TO ORDER
Reading of Conflicts of Interest
Tom Cabaniss, Chair

ROLL CALL

APPROVAL OF MINUTES
✓ — April 19, 2019 Open Session Meeting of the Executive Committee

CLOSED SESSION

RECONVENE IN OPEN SESSION

ADJOURN
OPEN SESSION MINUTES
North Carolina State University
Board of Trustees Executive Committee
Friday, April 19, 2019

Members present: Jimmy D. Clark, Chair; Robert F. “Chip” Andrews, Thomas E. Cabaniss; Ann B. Goodnight; and Stanhope A. Kelly

Others present: Randy Woodson, Chancellor; Allison Newhart, Vice Chancellor and General Counsel; and PJ Teal, Assistant Secretary

Chair Clark called the meeting to order at 7:30 a.m. He reminded all members of their duty to avoid conflicts of interest and appearances of conflicts of interest under the State Government Ethics Act and inquired as to whether there were any known conflicts of interest or appearances of conflict with respect to any matters coming before the board at this meeting. There being none, Chair Clark then called on Assistant Secretary PJ Teal for the roll call.

ROLL CALL
Assistant Secretary PJ Teal called roll and certified that a quorum was present.

MINUTES
Mr. Cabaniss made the motion, seconded by Mr. Kelly, to approve the open and closed session minutes of the February 22, 2019, meeting of the Executive Committee. The motion passed.

CHANCELLOR’S REPORT
Chancellor Randy Woodson reviewed the position description for Vice Chancellor for Finance and Administration. He said he has launched the search for that position and thanked Mr. Cabaniss for his willingness to serve as the Trustee Liaison on the committee.

Chancellor Woodson then discussed his proposed plan regarding the organizational structure for the risk and compliance functions of the university. He intends to create a senior, director level, position reporting directly to the Chancellor. The person in this position would oversee and direct the enterprise risk management responsibilities across the university.

With no further business for the Executive Committee, Chair Clark adjourned the meeting at 8:00 a.m.

Respectfully submitted:

______________________________  ______________________________
Assistant Secretary                     Secretary

______________________________
Chair