BOARD OF TRUSTEES
NORTH CAROLINA STATE UNIVERSITY
AUDIT, RISK MANAGEMENT AND FINANCE COMMITTEE
APRIL 15, 2021
MEETINGS: IN-PERSON AND VIA ZOOM

Chair Edward I. “Ed” Weisiger Jr.
Members: Melanie Flowers, Ann B. Goodnight, Stanhope A. Kelly,
Ven Poole, Dewayne N. Washington

■ CALL TO ORDER, READING OF ETHICS STATEMENT AND PUBLIC MEETING
NOTICE
Ed Weisiger, Jr., Chair

■ ROLL CALL

■ APPROVAL OF MINUTES
TAB 4.1
— Committee Action: Approve February 25, 2021 meeting minutes

■ APPROVAL ITEM
TAB 4.2
— Internal Audit Annual Plan Review and Approval
  4.2A
  Cecile M. Hinson, Chief Audit Officer and Director, Internal Audit
  • Committee Action: Approve Internal Audit FY2022 Plan

■ INFORMATIONAL REPORTS
TAB 4.3
— Internal Audit Update
  4.3A
  Cecile M. Hinson, Chief Audit Officer and Director, Internal Audit

— Legislative and Budget Update
  4.3B
  Kevin D. Howell, Vice Chancellor, External Affairs, Partnerships
  & Economic Development
  Charles A. Maimone, Vice Chancellor, Finance and Administration

— Finance Update
  4.3C
  Mary Peloquin-Dodd, Associate Vice Chancellor, Finance
  and University Treasurer, Finance Division

— Associated Entities Review
  4.3D
  Mary Peloquin-Dodd, Associate Vice Chancellor, Finance
  and University Treasurer, Finance Division

— University Debt Update
  4.3E
  Lori A. Johnson, University Controller, Finance Division

* Requires Full Board Approval
— Enterprise Risk Management and Compliance Update  4.3F
  Allison B. Newhart, Vice Chancellor and General Counsel
  Kristen A. Meeks, University Compliance, Ethics, and Enterprise Risk
  Management Officer, Office of General Counsel

■ COMMITTEE DISCUSSION  TAB 4.4

■ ADDITIONAL INFORMATIONAL MATERIALS  TAB 4.5
— NC State Investment Fund Performance  4.5A
— NC State Intermediate Term Fund Performance  4.5B

■ ADJOURN
The Audit, Risk Management and Finance Committee of the Board of Trustees of North Carolina State University met February 25, 2021 via a Zoom conference call.

Members Present: Edward I. “Ed” Weisiger Jr., Committee Chair
Melanie Flowers
Ann B. Goodnight
Stanhope A. Kelly
Dewayne N. Washington
Tom Cabaniss, Board Chair

Chair Weisiger called the meeting to order at 3:15 p.m. The roll was called and a quorum was present.

Chair Weisiger reminded those in attendance that this was a public meeting but was not a meeting for public comment. Only those included on the agenda are invited to speak. He then read the State Government Ethics Act to remind all members of their duty to report conflicts of interest or appearances of conflict.

Chair Weisiger asked Committee members to identify themselves when making a motion.

Approval of Minutes
The minutes from the November 12, 2020 meeting were presented for approval. Trustee Goodnight made a motion to approve and Trustee Kelly seconded. With no additional discussion, the minutes were approved with a roll call vote.

Action Items
No action items.

Informational Reports

Internal Audit Update
Cecile Hinson, Chief Audit Officer and Director, Internal Audit, provided a review on the status of audit engagements for fiscal year 2021, which were in the pre-materials. There have been thirty-seven (37) engagements including: six (6) closed, eighteen (18) in progress, three (3) that are on hold, and two (2) of which are on the original, approved plan but are not started yet. Activities in process since the last meeting include; three (3) reports, two (2) audits complete with corrective actions in progress, and one (1) of the audits on hold that has now been restarted. Ms. Hinson discussed the specific results and follow-up corrective actions for two audits: the Prestage Department of Poultry Science Business Process Audit and the Student Health Services Pharmacy Investigation.

Legislative and Budget Update
Kevin Howell, Vice Chancellor, External Affairs, Partnerships and Economic Development, discussed the North Carolina General Assembly. There is a feeling of bipartisan participation and the top three issues for this session appear to be COVID funds, biennium budget and redistricting. He also pointed out that the new Board of Governors elections will be next week.
Julie Smith, Assistant Vice Chancellor, External Affairs, Partnerships and Economic Development, provided more detail on the long session priorities that also include school reopening efforts. The forecast of the State’s fiscal position is one of strength. Ms. Smith also discussed the UNC System priorities, which includes four requests: (1) Budget Priorities for enrollment funding, building reserves, NC Promise Program; and faculty and staff salaries; (2) Capital Requests for Integrative Sciences Building and R&R funding; (3) Policy Requests, some of which include HR flexibilities, amended carryforward authority use and consolidation of need-based scholarship programs; and (4) Additional NC State Specific Legislative Priority related to NIIMBL.

Charles Maimone, Vice Chancellor, Finance and Administration, briefly discussed current fiscal year operations and COVID funding. Budgets are being managed by monitoring revenues and expenditures. Some costs are being offset with the COVID funding.

Finance Update
Mary Peloquin-Dodd, Associate Vice Chancellor, Finance and University Treasurer, noted that links to both the State of North Carolina Auditor’s report and the NC State Annual Financial Report were provided in the pre-materials. She then reported on the interim financials for the current fiscal year comparing the year over year balance, which show a net position gain of $77 million. She also presented the balance sheet performance for the first six months of fiscal 2021, indicating that the university is financially stable. A multi-year comparison of revenues and operating expenses, estimating current year impacts from COVID and comparing the results with prior years show that while operating revenues decreased, so did operating expenses. Overall there is a projected negative balance, however that is before gifts, CARES funding; and other accrual based items such as depreciation are included.

Annual Report on Endowment and Investments
Ms. Peloquin-Dodd provided the required annual report on endowment and investments, both long-term and short-term. The university reported a positive return of 2.1% for its $1.42 billion endowment for fiscal year 2020. This performance surpassed the NACUBO average of 1.5% for all public institution endowments in the survey. The university’s total endowment ranked the 78th largest out of 717 survey responses. NC State’s endowment per FTE, of $45,300 at June 30, 2020 ranked NC State 8th among its sixteen institutional peers, placing NC State between UC-Davis and Penn State in the rankings.

She also updated the Committee on the performance and market value of the operating cash investments that are held in the State Treasurer’s Short-Term Investment Fund and the NC State Intermediate Term Fund. Overall, the cash balance dropped about $56 million compared with the first six months of the prior year.

Intercollegiate Athletics Finance and Budget Report
Boo Corrigan, Director, Athletics and Beverly Armwood, Associate Director, Athletics, presented an extensive report on the Athletics budget for fiscal year 2021. Ms. Armwood discussed the initial projected revenue and expense streams, including revenue losses due to COVID-19, which resulted in a projected net loss of $22.8 million. She then discussed changes that have been, or will be, implemented that should increase revenue and decrease expenses. Some changes included reduced salaries and furloughs for all staff, travel savings, as well as game day savings. These changes reduced the projected net loss to $9.2 million.

Due to lack of time, the committee was directed to the pre-materials and the report on “Financial Reporting for Intercollegiate Athletics” for more information.
A Risk-Based Approach to Support Cybersecurity
Marc Hoit, Vice Chancellor, Information Technology and Chief Information Officer, presented “A Risk-Based Approach to Support Cybersecurity”. He explained how the pandemic changed IT priorities and highlighted the need for more security. All but 20 of the 300 central IT staff worked remotely. Remote work has also made broadband challenges more apparent, noting that 7% of NC State students had very limited access, and they are increasing efforts to improve this across the state.

He addressed national cybersecurity threats over the last year. Two-thirds (67%) of reported breaches resulted from credential theft and social attacks. A high 78% of attacks on web applications involved using stolen credentials. Finally, 70% of incidents were caused by outside entities, but 30% were internal.

At NC State, 329,000 incoming messages were marked as phishing in the last 30 days. IT added 29,000 new electronic identities in the last year. In addition, IT performed 283 IT purchase compliance reviews last year. There are many industry compliance rules and standards, such as NIST Standards, which are required for many federal contracts.

The UNC System Office issued three policies: 1400.1 IT Governance, 1400.2 Information Security and 1400.3 User Access and Identity Control. The university has been working on all three concurrently and are close to being compliant with all of the policies.

Dr. Hoit also presented the Six University Approaches and Solutions to Risk. The six approaches include: (1) a new formal risk-based process to rank and prioritize; (2) supporting the human element of risk, which is the highest risk for IT incidents and exposures; (3) elements of governance, risk and compliance, which provides a structure to develop, communicate and enforce IT security and compliance policies; (4) tools to manage the complexity; (5) talent pipeline and employee retention risk, IT staffing is one of the most competitive personnel areas in RTP; and (6) reducing infrastructure risk and creating partnerships, which includes sharing resources with the State of North Carolina department of IT.

He anticipates an IT audit next spring, as the previous audit was postponed.

Additional Informational Materials
Chair Weisiger made reference to additional information in the materials under Tab 4.4.

Adjournment
With no further business, Chair Weisiger announced the meeting adjourned at 5:00 p.m.

Submitted by __________________________________________
Secretary to the Committee

Approved by __________________________________________
Chair of the Committee
Internal Audit Division
Audit Plan
Fiscal Year 2022

NC STATE
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<th>Audits</th>
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<td>Foreign Influence</td>
<td>The objective of this audit is to assess the effectiveness of governance and processes</td>
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<td>ensuring compliance with foreign influence regulations</td>
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<td>The objective of this audit is to evaluate compliance with University Regulation, REG</td>
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<td>01.25.18 - Programs that Involve the Participation of Minors</td>
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<td>Cash Handling Processes - Colleges</td>
<td>The objective of this audit is to assess cash handling processes for:</td>
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<td>COVID-19 Relief Funding: Compliance with Federal and State Requirements</td>
<td>The objective of this audit is to assess the use of COVID-19 funding for compliance</td>
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<td>End of Grant Expenditures</td>
<td>The objective of this audit is to test financial expenditures at the end of federal grant</td>
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<td>awards to ensure they are allowable, allocable, and reasonable</td>
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**Information Technology Audits**

| Security Controls Over Transfer of Enterprise Systems Data into Storage | The objective of this audit is to assess the security of the Linux processing functions     |
|                                                                       | associated with transfer of Enterprise Systems data into storage                           |
| Application Programming Interface (API) Audit                        | The objective of this audit is to:                                                        |
|                                                                       | • Identify population of APIs transferring University data outside of PeopleSoft          |
|                                                                       | Enterprise Systems                                                                       |
|                                                                       | • Identify ultra-sensitive and sensitive data that is being transferred by APIs          |
|                                                                       | • Assess controls governing these types of transfers                                     |
|                                                                       | • Assess security of transfers of ultra-sensitive and sensitive data                      |
| Poole College of Management - Information Technology (IT) General Controls | The objective of this audit is to evaluate Poole College of Management IT Operations      |
|                                                                       | for effective governance and IT controls                                                  |
### Fiscal Year 2021 Engagements Expected to be in Progress on July 1, 2021

| Office of Finance and Administration - Environmental Health and Public Safety – Security Applications and Technology Services |
| Title IX Governance Processes |
| COVID-19 Relief Funding Monitoring and Reporting |

### Investigations

The Audit Plan includes estimated time for 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 Year’s Follow-up Audits

The Internal Audit Division performs follow-up activities on all audit issues reported by our office or the Office of the State Auditor. As of March 5, 2021, corrective actions for issues noted in the following audit reports will be assessed in fiscal year 2022:

| College of Agriculture and Life Sciences – Prestage Department of Poultry Science |
| College of Agriculture and Life Sciences – NC Cooperative Extension - Business Process Governance |
| College of Sciences – General IT Controls |
| Federal Safeguards Rule - Security Requirements Audit |
| Poole College of Management - Financial Business Operations – College and Department Issues |
| Poole College of Management - Financial Business Operations - University Issues |
| Student Health Services - Pharmacy Investigation |
| User Controls Over Ultra-Sensitive Data |

### Advisory Services

<p>| Office of Research and Innovation and Office of Finance and Administration - Enterprise Research Administration - Research Enterprise Data System Implementation |
| Internal Audit is providing advisory and consulting services on the replacement of multiple legacy systems used for enterprise research administration activities. |</p>
<table>
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<th>Continuous Risk Assessment and Audit Planning</th>
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<td>Every week, Internal Audit Division team members visit University faculty and staff 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 advisory engagements and is used as an objective tool in the development of our Annual Audit Plan.</td>
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Audit Risk Universe (see illustration, page 6)
Best practices relating to development of the audit universe contend that a risk-based internal audit function consider all risks that affect their enterprise, not just the "auditable risks." Specifically, at NCSU, this broader concept of the audit universe begins with the core elements of the NC State Mission: academics, research, and engagement. The NC State Internal Audit Division (IAD) identifies three integral activities necessary for the achievement of our mission:

1) Governing – performed by our university leadership team and the Board of Trustees who set the direction and ethical expectations for university constituents
2) Doing – performed by our faculty, engagement agents, and staff around the globe
3) Supporting – performed by university units through various processes and practices carefully designed to manage risk and ensure the university meets its goals, objectives, and requirements

Risks to these mission-critical activities and the ways in which risks are mitigated are the focus of our Continuous Risk Assessment (RA) Process that leads to the development of our Audit Risk Inventory and Audit Plan.

Continuous Risk Assessment Process (see illustration, page 7)
IAD continuously performs risk assessment activities across the Audit Risk Universe to identify areas of high risk to the university “enterprise” in relation to achieving both its strategic and tactical goals and objectives. The RA process is at the core of our audit and consulting engagements and is used as an objective tool in the development of our risk-based Audit Plans. We use our Audit Risk Inventory to compile and track risk exposures to the university’s governance, operations, and information systems that relate to components such as the:

- Reliability and integrity of research, financial, and operational information
- Effectiveness and efficiency of operations
- Safe-guarding of assets
- Compliance with university and UNC System policies
- Compliance with legal, regulatory, and contractual obligations
- Detection and prevention of fraud
- Effectiveness of information technology security and compliance

Audit Plan Development (see illustration, page 7)
All objective and subjective information and data gathered through our continuous RA process is analyzed when received and at IAD management team meetings. This on-going analysis process allows the Internal Audit Division 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.

Our Audit Plan reflects the results of our continuous assessment and analysis process as of the end of January each calendar year. Each year’s Plan is presented for approval at the April meeting of the NC State Board of Trustees and is implemented at the start of the new fiscal year on July 1.
NCSU Internal Audit Division
Continuous Risk Assessment and Audit Planning Process
Audit Risk Universe
NCSU Internal Audit Division
Risk Assessment and Audit Planning Process
Continuous Risk Inventory and Audit Plan Development

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

Likelihood & impact severity analysis
Subjective Analysis
Final score for each potential engagement

Capacity Analysis
Estimate project hours per potential and planned engagements

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

Monitor
Mitigated
Chief Audit Officer and Director

Cecile M. Hinson, CCEP, CFE, CISA
Cecile joined the Internal Audit Division in February 2001. Prior, she worked for Lockheed Martin and PricewaterhouseCoopers, LLP, in the areas of financial, operational, and information technology auditing. Cecile received her Bachelor of Science in Business with an emphasis in Accounting from Meredith College. She is a Certified Compliance and Ethics Professional (CCEP), a Certified Fraud Examiner (CFE), and a Certified Information Systems Auditor (CISA). She is also a graduate of the NC State Equal Opportunity Institute and holds an Information Technology Audit Certificate from the MIS Training Institute.

Assistant Director

Nancy L. Burgart, CFE, CISA
Nancy re-joined the Internal Audit Division in October 2010 after working as an IT Compliance Auditor in the NC Office of the State Chief Information Officer. Nancy began her career at NC State in August 1994 and worked in various departments across campus, including Telecommunications, NCSU Libraries, and Internal Audit. Nancy has a Bachelor of Science in Accounting from East Carolina University. She is a Certified Information Systems Auditor (CISA) and a Certified Fraud Examiner (CFE).

Audit Manager

Neil Holloway, MBA, CFE, CGFM, PMP
Neil joined the Internal Audit Division in February 2015. Previously, he worked as a financial management consultant for IBM and an auditor for the U.S. Department of Defense, Office of the Inspector General. Neil earned his Bachelor of Science in Accounting from Juniata College in 2007. He earned his Master of Business Administration (MBA) from NC State in 2017. He is a Project Management Professional (PMP), a Certified Government Financial Manager (CGFM), and a Certified Fraud Examiner (CFE).

Staff

Vanessa Collins, CPA, CFE
Vanessa joined the Internal Audit Division in March 2020 after serving as an investigative auditor at the NC Office of the State Auditor for over 4 years and, prior to that, as an investigator with the NC Real Estate Commission. Vanessa has a Bachelor of Arts degree from the University of North Carolina at Chapel Hill and an MBA from North Carolina State University. Vanessa is a Certified Public Accountant (CPA) and a Certified Fraud Examiner (CFE). She also serves as a cabinet member on the NCACPA’s Young CPA Cabinet.
M'Shiela R. Hawthorne, CIA, CFE
M'Shiela joined the Internal Audit Division in December 2014. She has over 20 years of accounting experience in various industries including the military. M'Shiela has a Bachelor of Science Degree in Accounting with a concentration in Internal Audit from NC State University. She is a Certified Internal Auditor (CIA) and a Certified Fraud Examiner (CFE).

Seth Miller, CISA, Net+
Seth joined the Internal Audit Division in August 2018. He has over 7 years of compliance and auditing experience in regulated industries. Seth started his career at a non-profit organization (RTI International) focusing on governance, security, and compliance. He then moved to a large private software company (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. Seth holds both Certified Information Systems Auditor (CISA) and Network Plus (Net+) certifications.

Sandra J. Soto, CFE
Sandra joined the Internal Audit Division in December 2017. She has over 20 years of accounting experience in various industries. Sandra graduated with honors and has a Bachelor of Science Degree in Accounting with a concentration in Internal Audit from NC State University. She is currently enrolled in the MBA program at NC State. Sandra is a Certified Fraud Examiner (CFE). She is also trilingual speaking English, Spanish, and French.

Caroline Pennington, MBA
Caroline joined the Internal Audit Division as a temporary executive assistant in June 2020. She has over 10 years of accounting and financial analysis experience in both the corporate world and at NC State University in the College of Textiles, Department of Mathematics, and Contracts and Grants. Caroline holds a Bachelor of Science in Accounting with a concentration in Information Systems from NC State University and a Master of Business Administration and Management Information Systems certification from East Carolina University.
North Carolina State University At Raleigh; CP; Public Coll/Univ - Unlimited Student Fees

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Credit Profile

The Brd of Governors of the Univ of North Carolina, North Carolina
North Carolina St Univ at Raleigh, North Carolina
University of North Carolina Brd of Governors (North Carolina State University at Raleigh)

Long Term Rating AA/Stable Affirmed

Rating Action

S&P Global Ratings affirmed its long-term 'AA' rating, and underlying rating (SPUR) where applicable, for North Carolina State University at Raleigh's (NC State) various series of general revenue bonds. In addition, S&P Global Ratings affirmed its 'A-1+' commercial paper (CP) rating on NC State's CP notes. The outlook, where applicable, is stable.

As of the fiscal year that ended on June 30, 2020, the university had $538.5 million in outstanding debt, including capitalized leases and $50 million of CP notes. After the end of fiscal year 2020 the university issued its series 2020A and 2020B general revenue bonds totaling $275.0 million. Total pro forma debt at fiscal year-end 2020 inclusive of the series 2020A and 2020B bonds is $630.5 million. Proceeds from the series 2020A and 2020B bonds are being used in part to fund construction of new engineering and plant sciences buildings, renovate Carmichael Gym, and fund a Centennial campus co-generation energy project. The series 2020A and 2020B bond proceeds also refinanced the series 2010B and 2013A bonds, and existing CP obligations. There are no plans for additional new-money debt within the outlook period. The university's outstanding general revenue bonds are payable from available funds, which we consider equivalent to an unlimited student fee.

COVID-19

As a result of the COVID-19 pandemic, undergraduate classes for spring 2020, summer 2020 sessions 1 and most of fall 2020 were moved entirely online. NC State students who occupied university housing in spring 2020 were instructed to return to their off-campus residences unless granted an exception. Graduate courses and clinical education continue to meet in person or in a hybrid format. Classes for spring semester 2021 began on Jan. 19 and are scheduled to conclude on April 30 with exams on May 15. We understand the university cancelled the 2021 spring break and instead offered students the option of taking four wellness days off. According to management, currently about 4,500 students are on campus with an average of about 61% of all students participating in on-line education (roughly 75% undergraduate and 50% graduate). The university, also beginning in the spring of 2020, transitioned to minimal on-campus operations, and requires remote work or alternative work arrangements for most employees.

The university indicated that despite COVID-19, more students enrolled in its last year's summer sessions relative to the prior summer sessions. Approximately 11.5% of students at the university are international students, and this has had some dampening effect on student enrollment due to the travel restrictions these students faced.
The university put most capital projects on hold in fiscal 2020. Auxiliary revenues make up approximately 14.3% of fiscal 2020 adjusted operating revenues down from 15.2% the prior year. We understand to date the university has been awarded $52.7 million in relief funding associated with the pandemic (including $17.8 million of Coronavirus Aid, Relief and Economic Security (CARES) Act part 1 funding in fiscal 2020 with $8.9 million used to offset some of the impacts related to the pandemic and the remaining $8.9 million funding student grants and most of the remainder from the Higher Education Emergency Relief Fund (HEERF) II Act.) We believe the university's available resources and liquidity are adequate to offset the medium-term pressure that might arise due to this pandemic. The university is currently awaiting the outcome of the state legislative session to see whether it may receive additional pandemic-related financial support and to assess how its appropriation for fiscal 2022 may be affected.

Owing to its relatively firm enrollment trend and the pandemic-related financial support it has received, NC State essentially almost broke even on an operating basis for fiscal 2020 and anticipates positive financial operations in fiscal 2021. Fall 2020 full time equivalent (FTE) enrollment totaled 32,277 down very slightly from fall 2019 FTE enrollment of 32,525 and management reports applications for fall 2021 are running ahead of the prior year's applications by about 4%. We also note that fall 2020 undergraduate applications reached a new peak of 31,487, tuition is frozen for in-state residents, and that 82.1% of students come from inside the state, which we feel helps to mitigate some pressure from the pandemic.

Credit overview
We assessed NC State's enterprise profile as very strong, characterized by healthy full-time-equivalent (FTE) enrollment, 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 operating performance in most years excluding fiscal 2020 when the pandemic depressed results, good financial policies, and a low to moderate debt burden with modest financial resources for the rating. We believe these credit factors, combined, 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 University of North Carolina (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 CP program, issued for the benefit of both NC State and UNC-Chapel Hill, 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 UNC System;
• Generally positive enrollment trend in most years, coupled with robust selectivity, matriculation, and retention rates; and
• Very sound financial management practices, evidenced by healthy operating margins in most years, conservative budgeting, and prudent controls over investments and additional debt issuance.

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 $368.1 million as of June 30, 2020, equating to 20% of adjusted operating expenses, 68% of total debt and 58% of pro forma debt;
- The potential for decreased state appropriations in fiscal 2022 and beyond as the extent of COVID-19 damage is revealed; and
- NC State's modest (for a major research university) but growing endowment of $1.4 billion as of fiscal year-end 2020 ($1.6 billion as of Dec. 31, 2020, per management), most of which is restricted.

The stable outlook reflects our belief that NC State's enrollment trend will remain favorable despite the continuing uncertainty associated with the COVID-19 pandemic. The stable outlook also reflects our view that the university's leadership will remain sound during these difficult times such that ongoing operations and available resources will be closely monitored with any needed adjustments made in a timely manner to preserve the university's financial position and by extension its credit rating.

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.

Environmental, social, and governance (ESG) factors
In our view, higher education entities face elevated social risk due to the uncertain duration of the COVID-19 pandemic, and the unknown impact on fall 2021 enrollment levels and mode of instruction. We view the risks posed by COVID-19 to public health and safety as a social risk under our ESG factors. Despite the elevated social risk, we believe NC State's environmental and governance risk are in line with our view of the sector as a whole.

Stable Outlook
Downside scenario
We could consider a negative rating action if enrollment unexpectedly decreases substantially or if operating performance materially deteriorates or available resources materially decline from current levels. Although not anticipated, we could also consider a negative rating action should the university issue additional debt without commensurate growth in available resources. Further unforeseen pressures from the pandemic that cause material weakening of demand, finances, or the trajectory of NC State's plan to mitigate the effects of the COVID-19 outbreak could also cause a negative rating action.

Upside scenario
A higher rating would require continuation of the generally favorable enrollment trend, positive financial operations on a full accrual basis, a significant increase in available resources and no material increases in debt coupled with state appropriation remaining firm.
Credit Opinion

Enterprise Profile

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 a result, our assessment of NC State's economic fundamentals is anchored by North Carolina's GDP per capita.

Market position and demand
NC State is the largest university in the UNC System with total headcount enrollment just exceeding 36,000 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 three fall enrollment periods, growth on both a total headcount and a total FTE basis is healthy with only a slight decline realized in fall 2020 due to the pandemic. Total FTE enrollment climbed 3.3% in fall 2018, 1.8% in fall 2019 followed by a slight decline of 0.8% in fall 2020. Total headcount was 36,042 in fall 2020, and total FTE enrollment was 32,277. Graduate enrollment has become a somewhat larger portion of enrollment in recent years and accounted for about 27% of total students for fall 2020. Despite the COVID-19 pandemic, management still anticipates relative stability in its undergraduate enrollment, and continues to monitor graduate enrollment trends, recently adding a spring admissions cohort with favorable results.

First-year applications totaled 31,487 in fall 2020, a 1.1% increase from the previous year. The university's selectivity ratio in fall 2020 was a solid 46.2%, its highest level of selectivity over the past seven years. A solid 32.6% matriculated for fall 2020.

Management reports that out-of-state applicants have increased, although not to the level where it would be bumping up against a Board of Governors policy that stipulates 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 1320 for fall 2020. First-year retention rates are also excellent at approximately 94%, and graduation rates remain well above the public university national average.

For the 2020-2021 academic year, undergraduate tuition and fees for state residents is $9,101 and for out-of-state students is $29,220, which we consider modest compared with peers' rates. Tuition is frozen for the fourth consecutive year for resident undergraduate students for fall 2020, although NC State has flexibility to raise fees where necessary, up to a 3% cap. We believe the tuition freeze has helped bolster demand for NC State during the pandemic.

A major strategic initiative at the university is fundraising. The alumni participation rate has improved recently rising to 12.5% in fiscal 2020 from 11.3% in 2019 and 10.0% in 2018. However, our view is low relative to peer institutions. The university completed a successful capital campaign in 2008, in which it raised $1.37 billion. Its current campaign known as "Think And Do the Extraordinary" is scheduled to close at the end of the current calendar year and has raised $1.9 billion to date with expectations of reaching $2.0 billion by year end. The current campaign began in 2013 with an initial goal of $1.4 billion that was raised to $1.6 billion when the campaign went public in October 2016. Funds

WWW.STANDARDANDPOORS.COM/RATINGSDIRECT MARCH 10, 2021 5
from the campaign are targeted toward building the university endowment, programs and professorships, and scholarships. We view the university’s ability to fundraise as a credit strength that has helped it mitigate some pressure from the pandemic.

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 North Carolina General Assembly, 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.

Management and governance are stable at the university with no changes in key administrators in fiscal 2020 and thus far through fiscal 2021. We also understand NC State is about to launch its next strategic plan development process as the existing 10-year plan ended in fiscal 2020 (extended through fiscal 2021 due to the pandemic). The existing strategic plan 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. We understand one focus of the new plan will be to promote environmental sustainability. In addition, we view positively management’s conservative budgeting practices.

NC State has taken several 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 took appropriate steps to address an NCAA notice of allegations in connection with alleged rules violations issued in 2019 following the federal government's inquiry into men's college basketball.

Research
NC State's campus includes a north and 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. Management indicates NC State is looking to create an innovation district within the next year or so on the Centennial Campus that could include market-priced housing, private labs and innovation space that would foster collaboration with university students and private sector potential student employers. To accomplish this objective a public-private partnership structure is being considered. 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 17.7% of revenues for fiscal 2020, the largest contributor of which is the National Science Foundation. We understand research expenditures in fiscal 2020 exceeded $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, NC State'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 university's financial reporting and disclosure, investment allocation and liquidity, debt profile, contingent liabilities, and legal structure and a comparison of these policies with those of comparable institutions.

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 six audited fiscal years through June 30, 2019. In fiscal 2020, in large part due to a decline in auxiliary revenue resulting from the pandemic, operations were slightly weaker approximating breakeven (0.2%). NC State posted a positive net tuition revenue increase in fiscal 2020, despite the tuition freeze in effect for resident undergraduate students. Management continues to monitor results for fiscal 2021 and expects to achieve positive operating results aided by the funds realized from the CARES Act.

State appropriations continue to slowly grow and were $523.4 million in fiscal 2020 up from $522.5 million in the previous year. However, management took a conservative stance for the university's fiscal 2021 budget and allowed for the possibility of a decrease in state funding; we understand the appropriation for fiscal 2021 wound up being the same as that for fiscal 2020. The state legislature is currently in session and we understand NC State is anticipating a resumption of positive year over year increases in state appropriation for fiscal 2022. Capital appropriations have historically been modest and were $4.7 million in fiscal 2019 and $903,000 for fiscal 2020.

Available resources
The university's financial resources are adequate to support the rating but somewhat low for the rating category in our view. The principal 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 2020 and funds the university has expended to maintain its campus with a relatively young 11.5-year average age of plant. Adjusted UNA totaled $347.2 million as of June 30, 2020, equal to just 19.8% of adjusted operating expenses, 68.4% of total debt, and 58.4% of pro forma debt.

Total market value for the NC State associated entities and the university endowment fund was $1.4 billion as of fiscal year-end 2020. Management attributes the increase to successful fundraising associated with its capital campaign as well as solid investment returns for the year. Most of the university's endowments are pooled into the North Carolina State Investment Fund. 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 2020, the university has approximately $538.5 million in total debt outstanding. With the series 2020A and 2020B issuance included total pro forma debt at fiscal year-end 2020 is $630.5 million. The series 2020A and 2020B bond proceeds were used to refinance the university's series 2010B and 2013A bonds, and outstanding CP debt. The $92 million new-money component of the issuance is funding construction of various capital projects on campus. 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 these practices mitigate some of the risk associated with the university's modest overall debt level. All of the university's debt is fixed rate.

In 2010, the university negotiated a direct-placement loan with BB&T Bank, with $13.3 million outstanding at fiscal year-end 2020. Also, the university has a direct-placement obligation with Bank of America outstanding at fiscal year-end 2020 in the amount of $43.4 million. In addition, the university negotiated a $50 million direct-placement loan with PNC in 2017 and currently has $37.7 million outstanding as of fiscal 2020. 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 $42.9 million to the plan for the year ended June 30, 2020, recognized pension expense of $86.5 million and reported a liability of $234.4 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 88.0%. 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 $848.7 million in fiscal 2020, of which $331.6 million was covered under ORP. NC State made contributions to ORP in fiscal 2020 of $19.9 million.

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 $44.3 million for the year ended June 30, 2020, and to the DIPNC were $685,245. As of June 30, 2020, the university reported a net other postemployment benefit (OPEB) liability of approximately $1.2 billion for RHBF and a net OPEB asset of $1.7 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

<table>
<thead>
<tr>
<th>Enrollment and demand</th>
<th>2021</th>
<th>2020</th>
<th>2019</th>
<th>2018</th>
<th>2017</th>
<th>2019</th>
</tr>
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<tbody>
<tr>
<td>Headcount</td>
<td>36,042</td>
<td>36,379</td>
<td>35,550</td>
<td>34,432</td>
<td>33,755</td>
<td>MNR</td>
</tr>
<tr>
<td>Full-time equivalent</td>
<td>32,277</td>
<td>32,525</td>
<td>31,971</td>
<td>30,954</td>
<td>29,864</td>
<td>36,667</td>
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</tbody>
</table>

Medians for ‘AA’ rated public colleges and universities
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<thead>
<tr>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman acceptance rate (%)</td>
<td>46.2</td>
<td>45.1</td>
<td>46.8</td>
<td>50.8</td>
<td>47.0</td>
<td>69.6</td>
</tr>
<tr>
<td>Freshman matriculation rate (%)</td>
<td>32.6</td>
<td>42.8</td>
<td>42.3</td>
<td>34.8</td>
<td>34.4</td>
<td>MNR</td>
</tr>
<tr>
<td>Undergraduates as % of total enrollment (%)</td>
<td>72.6</td>
<td>71.4</td>
<td>70.9</td>
<td>70.1</td>
<td>70.6</td>
<td>78.8</td>
</tr>
<tr>
<td>Freshman retention (%)</td>
<td>93.6</td>
<td>94.0</td>
<td>94.0</td>
<td>94.0</td>
<td>93.8</td>
<td>85.7</td>
</tr>
<tr>
<td>Graduation rates (six years) (%)</td>
<td>84.9</td>
<td>83.0</td>
<td>81.0</td>
<td>79.0</td>
<td>76.0</td>
<td>MNR</td>
</tr>
</tbody>
</table>

**Income statement**

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</tr>
</thead>
<tbody>
<tr>
<td>Adjusted operating revenue ($000s)</td>
<td>N.A.</td>
<td>1,748,333</td>
<td>1,779,088</td>
<td>1,711,697</td>
<td>1,650,273</td>
<td>MNR</td>
</tr>
<tr>
<td>Adjusted operating expense ($000s)</td>
<td>N.A.</td>
<td>1,752,280</td>
<td>1,691,952</td>
<td>1,656,965</td>
<td>1,604,049</td>
<td>MNR</td>
</tr>
<tr>
<td>Net adjusted operating income ($000s)</td>
<td>N.A.</td>
<td>(3,947)</td>
<td>87,136</td>
<td>54,732</td>
<td>46,224</td>
<td>MNR</td>
</tr>
<tr>
<td>Net adjusted operating margin (%)</td>
<td>N.A.</td>
<td>(0.23)</td>
<td>5.15</td>
<td>3.30</td>
<td>2.88</td>
<td>1.50</td>
</tr>
<tr>
<td>Estimated operating gain/loss before depreciation ($000s)</td>
<td>N.A.</td>
<td>103,970</td>
<td>187,419</td>
<td>153,653</td>
<td>141,867</td>
<td>MNR</td>
</tr>
<tr>
<td>Change in unrestricted net assets (UNA; $000s)</td>
<td>N.A.</td>
<td>27,936</td>
<td>85,868</td>
<td>(1,702,283)</td>
<td>(3,984)</td>
<td>MNR</td>
</tr>
<tr>
<td>State operating appropriations ($000s)</td>
<td>N.A.</td>
<td>523,411</td>
<td>522,482</td>
<td>515,353</td>
<td>506,419</td>
<td>MNR</td>
</tr>
<tr>
<td>State appropriations to revenue (%)</td>
<td>N.A.</td>
<td>29.9</td>
<td>29.4</td>
<td>30.1</td>
<td>30.7</td>
<td>18.3</td>
</tr>
<tr>
<td>Student dependence (%)</td>
<td>N.A.</td>
<td>40.6</td>
<td>40.6</td>
<td>40.6</td>
<td>39.9</td>
<td>41.2</td>
</tr>
<tr>
<td>Research dependence (%)</td>
<td>N.A.</td>
<td>17.7</td>
<td>17.6</td>
<td>17.2</td>
<td>17.5</td>
<td>MNR</td>
</tr>
<tr>
<td>Endowment and investment income dependence (%)</td>
<td>N.A.</td>
<td>1.1</td>
<td>2.3</td>
<td>2.4</td>
<td>2.1</td>
<td>1.4</td>
</tr>
</tbody>
</table>

**Debt**

<p>| | | | | | | |</p>
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Outstanding debt ($000s)</td>
<td>N.A.</td>
<td>538,457</td>
<td>535,821</td>
<td>553,988</td>
<td>573,203</td>
<td>808,057</td>
</tr>
<tr>
<td>Proposed debt ($000s)*</td>
<td>N.A.</td>
<td>275,050</td>
<td>N.A.</td>
<td>N.A.</td>
<td>N.A.</td>
<td>MNR</td>
</tr>
<tr>
<td>Total pro forma debt ($000s)</td>
<td>N.A.</td>
<td>630,457</td>
<td>N.A.</td>
<td>N.A.</td>
<td>N.A.</td>
<td>MNR</td>
</tr>
<tr>
<td>Pro forma MADS</td>
<td>N.A.</td>
<td>47,001</td>
<td>N.A.</td>
<td>N.A.</td>
<td>N.A.</td>
<td>MNR</td>
</tr>
<tr>
<td>Current debt service burden (%)</td>
<td>N.A.</td>
<td>2.44</td>
<td>2.56</td>
<td>2.63</td>
<td>2.36</td>
<td>MNR</td>
</tr>
<tr>
<td>Current MADS burden (%)</td>
<td>N.A.</td>
<td>2.48</td>
<td>2.57</td>
<td>2.63</td>
<td>2.79</td>
<td>3.60</td>
</tr>
<tr>
<td>Pro forma MADS burden (%)</td>
<td>N.A.</td>
<td>2.68</td>
<td>N.A.</td>
<td>N.A.</td>
<td>N.A.</td>
<td>MNR</td>
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</tbody>
</table>

**Financial resource ratios**

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</thead>
<tbody>
<tr>
<td>Endowment market value ($000s)</td>
<td>N.A.</td>
<td>1,417,700</td>
<td>1,400,700</td>
<td>1,293,700</td>
<td>1,122,900</td>
<td>1,006,154</td>
</tr>
<tr>
<td>Related foundation market value ($000s)</td>
<td>N.A.</td>
<td>642,645</td>
<td>635,453</td>
<td>688,435</td>
<td>625,523</td>
<td>782,587</td>
</tr>
</tbody>
</table>
North Carolina State University at Raleigh, North Carolina Enterprise And Financial Statistics (cont.)

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Cash and investments ($000s)</td>
<td>N.A.</td>
<td>786,700</td>
<td>758,252</td>
<td>691,428</td>
<td>611,322</td>
<td>MNR</td>
</tr>
<tr>
<td>UNA ($000s)</td>
<td>N.A.</td>
<td>(1,352,030)</td>
<td>(1,379,966)</td>
<td>(1,465,834)</td>
<td>236,449</td>
<td>MNR</td>
</tr>
<tr>
<td>Adjusted UNA ($000s)</td>
<td>N.A.</td>
<td>347,249</td>
<td>346,741</td>
<td>337,993</td>
<td>351,171</td>
<td>MNR</td>
</tr>
<tr>
<td>Cash and investments to</td>
<td>N.A.</td>
<td>44.9</td>
<td>44.8</td>
<td>41.7</td>
<td>38.1</td>
<td>56.4</td>
</tr>
<tr>
<td>operations (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash and investments to</td>
<td>N.A.</td>
<td>146.1</td>
<td>141.5</td>
<td>124.8</td>
<td>106.7</td>
<td>169.9</td>
</tr>
<tr>
<td>debt (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash and investments to</td>
<td>N.A.</td>
<td>124.8</td>
<td>N.A.</td>
<td>N.A.</td>
<td>N.A.</td>
<td>MNR</td>
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<tr>
<td>pro forma debt (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted UNA to operations (%)</td>
<td>N.A.</td>
<td>19.8</td>
<td>20.5</td>
<td>20.4</td>
<td>21.9</td>
<td>36.7</td>
</tr>
<tr>
<td>Adjusted UNA plus debt</td>
<td>N.A.</td>
<td>68.4</td>
<td>68.6</td>
<td>64.2</td>
<td>64.3</td>
<td>92.9</td>
</tr>
<tr>
<td>service reserve to debt (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjusted UNA plus debt</td>
<td>N.A.</td>
<td>58.4</td>
<td>N.A.</td>
<td>N.A.</td>
<td>N.A.</td>
<td>MNR</td>
</tr>
<tr>
<td>service reserve to pro forma</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>debt (%)</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Average age of plant (years)</td>
<td>N.A.</td>
<td>11.5</td>
<td>11.5</td>
<td>10.9</td>
<td>10.5</td>
<td>13.2</td>
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<tr>
<td>OPEB liability to total</td>
<td>N.A.</td>
<td>38.1</td>
<td>34.0</td>
<td>37.6</td>
<td>N.A.</td>
<td>MNR</td>
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<tr>
<td>liabilities (%)</td>
<td></td>
<td></td>
<td></td>
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</table>


Related Research

Through The ESG Lens 2.0: A Deeper Dive Into U.S. Public Finance Credit Factors, April 28, 2020

Ratings Detail (As Of March 10, 2021)

North Carolina St Univ at Raleigh taxable gen rev bnds

Long Term Rating: AA/Stable Affirmed

North Carolina St Univ at Raleigh tax-exempt gen rev bnds

Long Term Rating: AA/Stable Affirmed

North Carolina St Univ at Raleigh ICR

Long Term Rating: AA/Stable Affirmed

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

North Carolina St Univ at Raleigh, North Carolina

The Brd of Governors of the Univ of North Carolina (North Carolina St Univ at Raleigh) gen rev rfdg bnds

Long Term Rating: AA/Stable Affirmed

The Brd of Governors of the Univ of North Carolina (North Carolina St Univ at Raleigh) CP bnds

Short Term Rating: A-1+ Affirmed
North Carolina State University At Raleigh; CP; Public Coll/Univ - Unlimited Student Fees
**Review of Audit Reports - University Associated Entities**

*Audit, Risk Management and Finance Committee*

*North Carolina State University*

*June 30, 2020*

<table>
<thead>
<tr>
<th>INVESTMENT ENTITY:</th>
<th>Total Net Assets June 30, 2020 In 000's</th>
<th>Unqualified Audit Opinion</th>
<th>Management Letter</th>
<th>Signed Operating Agreement</th>
</tr>
</thead>
<tbody>
<tr>
<td>NC State Investment Fund, Inc.</td>
<td>$1,277,396</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
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<table>
<thead>
<tr>
<th>FUNDRAISING ENTITIES:</th>
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<tbody>
<tr>
<td>The North Carolina Agricultural Foundation, Inc.</td>
</tr>
<tr>
<td>NC State Engineering Foundation, Inc.</td>
</tr>
<tr>
<td>North Carolina State University Foundation, Inc.</td>
</tr>
<tr>
<td>NC State Executive Education, LLC (a, b, c)</td>
</tr>
<tr>
<td>North Carolina Tobacco Foundation, Inc.</td>
</tr>
<tr>
<td>NC State Natural Resources Foundation, Inc.</td>
</tr>
<tr>
<td>North Carolina Veterinary Medical Foundation, Inc.</td>
</tr>
<tr>
<td>North Carolina State University College of Sciences Foundation, Inc.</td>
</tr>
<tr>
<td>NC State University Alumni Association, Inc.</td>
</tr>
<tr>
<td>NCSU Student Aid Association, Inc.</td>
</tr>
<tr>
<td>North Carolina Textile Foundation, Inc.</td>
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</table>

<table>
<thead>
<tr>
<th>SOCIAL CLUB ENTITIES:</th>
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</thead>
<tbody>
<tr>
<td>North Carolina State University Club (d)</td>
</tr>
<tr>
<td>The NC State Alumni Club, Inc. (d, f)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OTHER ENTITIES:</th>
</tr>
</thead>
<tbody>
<tr>
<td>NC State University Partnership Corporation</td>
</tr>
<tr>
<td>Leaders in Innovation and Nonwovens Commercialization, LLC (a, e)</td>
</tr>
<tr>
<td>NC State University Centennial Development, LLC (a, e)</td>
</tr>
<tr>
<td>NC State Upfit, LLC (a, e)</td>
</tr>
<tr>
<td>Bell Tower Holdings LLC (a, e)</td>
</tr>
<tr>
<td>NC State CBC Land I, LLC (a, e)</td>
</tr>
<tr>
<td>NC State CC Holdings I, LLC (a, e)</td>
</tr>
<tr>
<td>Wolfpack Investor Network, LLC (a, e)</td>
</tr>
<tr>
<td>C2I, LLC (a, e)</td>
</tr>
<tr>
<td>Research, LLC (a, e)</td>
</tr>
</tbody>
</table>

(a) LLC's are wholly owned by aforementioned entity
(b) Net Assets also included in NCSU Fdn Total Net Assets
(c) Operating Agreement is between LLC and NC State University Foundation
(d) December 31 year end; numbers are as of December 31, 2019
(e) Operating Agreement is between LLC and NC State University Partnership Corporation
(f) Data pulled from the latest draft

N/A - Not applicable
University Debt Update

North Carolina State University
Audit, Risk Management and Finance Committee
April 15, 2021

Lori Johnson
University Controller
Debt Outstanding
10 year history

 Millions

<table>
<thead>
<tr>
<th>Year</th>
<th>Debt Outstanding</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>$419</td>
</tr>
<tr>
<td>2013</td>
<td>$580</td>
</tr>
<tr>
<td>2014</td>
<td>$570</td>
</tr>
<tr>
<td>2015</td>
<td>$560</td>
</tr>
<tr>
<td>2016</td>
<td>$563</td>
</tr>
<tr>
<td>2017</td>
<td>$567</td>
</tr>
<tr>
<td>2018</td>
<td>$565</td>
</tr>
<tr>
<td>2019</td>
<td>$535</td>
</tr>
<tr>
<td>2020</td>
<td>$528</td>
</tr>
<tr>
<td>2021</td>
<td>$557</td>
</tr>
</tbody>
</table>
Annual Scheduled Debt Service
Debt Outstanding by Type
June 30, 2021

FY2020 Cost of Funds = 3.36%
Debt Outstanding by Purpose
June 30, 2021

- Athletics: $31,232,759
- Campus Recreation: $44,272,644
- Centennial Campus: $9,466,896
- Energy Savings: $71,551,790
- Housing: $180,236,971
- Reynolds: $8,434,057
- Student Health: $1,575,649
- Talley Student Union: $87,381,030
- Terry Hospital: $22,383,121
2020 Bond Issue  
(closed July, 2020)

- Series 2020A $82,335,000
- Taxable Series 2020B $184,445,000
- All In True Interest Cost 2.165%
- Projects funded:
  - Carmichael Wellness and Recreation Center
  - Fitts-Woolard Hall
  - Plant Sciences Initiative
  - Refund Series 2010B and 2013A
  - NPV savings = $26,273,599 (15.14%)
Scheduled Debt Service Comparison

Before 2020 Issue

After 2020 Issue

2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036 2037 2038 2039 2040 2041 2042 2043 2044 2045

4.3E
Questions?
The seeming disconnect between the Wall Street rally in equities and the economic realities of Main Street continued to exist during the fourth quarter as markets marched higher in the face of accelerating COVID-19 cases and election-driven uncertainty. The broad economic recovery began to decelerate during the quarter as new lockdown measures shuttered businesses and restricted consumer activity. Non-farm payrolls, which had seen new jobs grow since May, reported a December job loss of 140,000 jobs, with the largest drop coming from the leisure and hospitality industries.

Consumer confidence fell to near-pandemic lows as industrial production and manufacturing data also retreated. On a positive note, the United States began its COVID-19 vaccine rollout in late Q4, offering hopes for a return to normalcy and the Fed continued to state its willingness to keep interest rates low, providing an accommodative environment for an economic recovery in 2021.

Domestic equities, as measured by the S&P 500 Index, posted another strong return for the quarter, gaining 12.1%. Small cap stocks, as measured by the Russell 2000 Index, mounted an impressive comeback, returning 31.4% for the period. Small caps lagged the S&P 500 for much of the 2020 market rally but staged a comeback to outpace the S&P for the one-year period, returning 20.0% versus 18.4%. From a style perspective, Q4 saw a modest rotation in favor of value, with the Russell 1000 Value returning 16.3% compared to the 11.4% for the Russell 1000 Growth Index. Over the one-year horizon, however, growth significantly outperformed with a 38.5% gain compared to just 2.8% for value.

International equities found their footing in the fourth quarter with the MSCI EAFE Index returning 16.1%, bringing its one-year return to a positive 8.3%. Although many European countries were forced to tighten Pandemic-driven restrictions, the significant budget package (which included a recovery fund) passed by the EU, a signed Brexit trade deal, and effective vaccine developments led European equities higher, with many of the hardest hit sectors (energy and financials), being the top gainers.

Emerging markets also produced significant gains during the period, with the MSCI Emerging Markets Index returning 19.8%. Emerging market investments were boosted by a recovery in energy prices and the continued weakening of the US dollar.

The U.S. Treasury yield curve saw modest steepening during the quarter. The front-end of the curve remained anchored near 0%, as the 10-year note increased from 0.69% at the beginning of the period to 1.65% by 12/31. As a result, Treasury returns, particularly long-dated Treasuries, lagged during the quarter with the Bloomberg Barclays US Treasury 20+ Year Index losing 3.0%. High yield fixed income, as measured by the Bloomberg Barclays US High Yield Corporate Index, and international bonds, as measured by the Bloomberg Barclays International Corporate Bond Index, were the top gainers, each returning 6.5% for the period.

Looking ahead, effective and efficient vaccine distribution remains the key to a broad economic recovery. On the political front, Mr. Biden won the Presidency during the quarter and following Senate run-off elections in Georgia, Democrats now lead both the executive and legislative branches of government. A key appointment by Biden is the former Fed Chair Janet Yellen as Treasury Secretary. The potential working relationship of Yellen with Fed Chair Jay Powell, is one that has not been seen since the days of World War II and will most likely be reassuring for investors in the near term, since there is little doubt that the central bank will continue its efforts to provide stimulus for an economic recovery.

### PERFORMANCE

The NCSIF (Fund) is a large, diversified investment pool with a long-term perspective. At December 31, 2020 the Fund had $1.3 Billion invested with several managers in a wide variety of asset classes. The largest manager for the Fund, UNCMC, managed 82.8% of the Fund’s assets. The UNC Investment Fund (UNCIF) produced a three-month return of 9.3%, and a 12-month return of 14.8% for the period ended December 31, 2020. The NCSIF employs sixteen additional private equity managers, who oversee 3.0% of the portfolio. This portion of the Fund produced a three-month and 12-month return of 6.5% and 10.6%, respectively, for the period ended December 31, 2020. The Fund’s Liquid Policy Portfolio (LPP), managed by Blackrock, was another 11.7% of the portfolio. This investment returned 12.2% for the three months and 12.5% for the 12 months ended December 31, 2020. The remaining 2.5% of the portfolio is invested in cash with the State Treasurer’s Short-Term Investment Fund (STIF).

### RISK METRICS

<table>
<thead>
<tr>
<th></th>
<th>3 Year Period</th>
<th>Fund</th>
<th>UNCIF</th>
<th>Policy Index</th>
<th>MSCI ACWI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annualized Return</td>
<td>10.1%</td>
<td>10.7%</td>
<td>9.1%</td>
<td>10.1%</td>
<td></td>
</tr>
<tr>
<td>Annualized Volatility</td>
<td>7.5%</td>
<td>7.2%</td>
<td>12.4%</td>
<td>18.4%</td>
<td></td>
</tr>
<tr>
<td>Annual Sharpe Ratio (1)</td>
<td>1.35</td>
<td>1.48</td>
<td>0.74</td>
<td>0.55</td>
<td></td>
</tr>
<tr>
<td>Correlation to Global Index</td>
<td>0.93</td>
<td>0.90</td>
<td>1.00</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Max Drawdown</td>
<td>-7.9%</td>
<td>-7.2%</td>
<td>-14.4%</td>
<td>-21.4%</td>
<td></td>
</tr>
</tbody>
</table>

Note 1: Sharpe Ratio: Excess return per unit of risk

| Note 2: Global Index: 70% MSCI ACWI; 30% Bloomberg Barclay’s Aggregate Bond Index
| Note 3: BNY Mellon Endowment & Foundation Universe Median Return—132 portfolios are represented for the one-year period ended December 31, 2020 |

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.

Second Quarter Fiscal Year 2021
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, 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

The Fund is allocated in the following percentages:

- Long Biased Equity: 35.0%
- Long/Short Equity: 13.9%
- Diversifying: 6.1%
- Fixed Income: 2.2%
- Private Equity: 4.7%
- Private Credit: 3.0%
- Real Estate: 3.7%
- Energy & Natural Resources: 8.6%
- Cash: 22.8%
- Unclassified: 0.0%

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), a broadly diversified portfolio emphasizing equity-related investments to achieve the fund's long-term return objective. The transition of assets to UNCMC was completed December 2009. In 2012, the Fund invested in a Liquid Policy Portfolio (Blackrock LPP) of Exchange Traded Funds (ETF's) providing 70% equity and 30% fixed income passive exposure. In 2017, the Fund partnered with a non-discretionary private asset advisor to continue its legacy private assets program (NCSIF Private Assets) investing in a diversified portfolio of direct private assets focusing on buyouts with complementary allocations to private credit and real asset opportunities. The remaining portion of the portfolio is invested in a short term cash vehicle (STIF) to fund capital calls and liquidity for operating needs.
**NC State Intermediate Term Fund**

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

**Inception Date:** July 3, 2014

**December 31, 2020**

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**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, FY 2017, and FY 2021, bringing the total invested to $261.83 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 $258.3 million.

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**SECTOR ALLOCATION**

![Sector Allocation Chart](chart.png)

- **ITF**
- **iShares Core 1-5 Year USD Bond ETF**

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**PERFORMANCE**

<table>
<thead>
<tr>
<th>Performance</th>
<th>QTD</th>
<th>FYTD</th>
<th>1 Year</th>
<th>3 Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITF Fund</td>
<td>1.7%</td>
<td>3.1%</td>
<td>5.1%</td>
<td>4.1%</td>
</tr>
<tr>
<td>Barclays 1-3 yr Treasury</td>
<td>0.0%</td>
<td>0.1%</td>
<td>3.2%</td>
<td>2.8%</td>
</tr>
<tr>
<td>Barclays Universal 1-5 yr</td>
<td>0.9%</td>
<td>1.7%</td>
<td>4.9%</td>
<td>3.9%</td>
</tr>
<tr>
<td>DoubleLine</td>
<td>0.4%</td>
<td>1.5%</td>
<td>4.1%</td>
<td>3.9%</td>
</tr>
<tr>
<td>PIMCO Income</td>
<td>4.5%</td>
<td>7.6%</td>
<td>5.8%</td>
<td>4.8%</td>
</tr>
<tr>
<td>Vanguard Short Term</td>
<td>1.0%</td>
<td>1.9%</td>
<td>5.3%</td>
<td>4.0%</td>
</tr>
</tbody>
</table>

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**STATISTICS**

<table>
<thead>
<tr>
<th></th>
<th>Fund</th>
<th>Index (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volatility</td>
<td>2.4%</td>
<td>1.5%</td>
</tr>
<tr>
<td>Sharpe Ratio</td>
<td>1.1</td>
<td>1.7</td>
</tr>
<tr>
<td>SEC Yield</td>
<td>1.6%</td>
<td>0.9%</td>
</tr>
<tr>
<td>Effective Duration</td>
<td>2.6</td>
<td>2.7</td>
</tr>
<tr>
<td>FYTD Net Interest &amp; Dividends**</td>
<td>$2,633,892</td>
<td>N/A</td>
</tr>
<tr>
<td>Net Interest &amp; Dividends Since Inception**</td>
<td>$33,535,348</td>
<td>N/A</td>
</tr>
</tbody>
</table>

*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.

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**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.

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**MANAGER ALLOCATION**

- **PIMCO Income, 24%**
- **Vanguard Short Term, 61%**
- **DoubleLine, 15%**

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Second Quarter Fiscal Year 2021