



**OPEN SESSION**

**FOR ACTION**

1. **Approval of March 22, 2023 Minutes**  
*Marty Kotis, Committee Chair*
2. **Fiscal Year 2024 Risk Assessment and Internal Audit Work Plan**  
*Dean Weber, Chief Audit Officer*

**FOR INFORMATION**

1. **IT Security Issues and Program Update**  
*Michael Barker, Vice Chancellor for Information Technology and Chief Information Officer*  
*Paul Rivers, Chief Information Security Officer and Assistant Vice Chancellor for Information Security*
2. **Top Five Enterprise Risk Management (ERM) Risks**  
*George Battle, Vice Chancellor for Institutional Integrity and Risk Management*  
*Dean Weber, Chief Audit Officer*
3. **Water Testing**  
*George Battle, Vice Chancellor for Institutional Integrity and Risk Management*  
*Catherine Brennan, Executive Director, Environment, Health, and Safety*  
*Darrell Jeter, Director, Emergency Management and Planning*

\*Some of the business to be conducted is authorized by the N.C. Open Meetings Law to be conducted in closed session.

**UNC-CHAPEL HILL BOARD OF TRUSTEES  
AUDIT, COMPLIANCE, AND RISK MANAGEMENT COMMITTEE MEETING  
Open Session Minutes**

**March 22, 2023**

Committee Chair Marty Kotis called the meeting to order at 9:04 a.m. in the Chancellor's Ballroom at The Carolina Inn. Assistant Secretary Chris McClure called the roll. The following committee members were present:

Vice Chair Malcolm K. Turner  
John P. Preyer  
Allie Ray McCullen

**OPEN SESSION**

The following items were presented for action:

**Approval of January 25, 2023 Minutes**

The Committee reviewed and approved the minutes of January 25, 2023.

Trustee Preyer made a motion for approval, which was seconded. The motion carried.

Committee Chair Kotis noted that without objection the item approved would be added to the Consent Agenda for the Full Board meeting.

**Nondiscrimination Resolution**

Committee Chair Kotis presented the Carolina Civil Rights Resolution for consideration and approval.

Trustee Preyer made a motion for approval, which was seconded. The motion carried.

The following items were presented for information:

**Report pursuant to Section 300.8.5 of the UNC Policy Manual**

At the request of the Committee Chair, Vice Chancellor Knuffman presented a brief summary of information contained in the report submitted to the UNC System Office pursuant to Section 300.8.5 of the UNC Policy Manual.

Questions and comments followed.

**Campus Safety Update**

George Battle, Vice Chancellor for Institutional Integrity and Risk Management, provided the committee with a campus safety update. Following the update, questions and discussion were entertained by the Board.

**Follow-up Briefing on FY 2022 Audit Projects**

Dean Weber, Chief Audit Officer, gave an informational briefing on the FY 2022 Office of Internal Audit projects.

**ADJOURNMENT**

There being no further business to come before the committee, Committee Chair Kotis adjourned the meeting with no objection.

**AGENDA ITEM***Action Item 2****Fiscal Year 2024 Risk Assessment and Internal Audit Work Plan*****Situation:**

The Committee has for its consideration the University of North Carolina at Chapel Hill's Office of Internal Audit Risk Assessment and Fiscal Year 2024 Internal Audit Work Plan for review and action.

**Background:**

The Audit, Compliance, and Risk Assessment Committee Charter directs the Committee's review and approval of the Office of Internal Audit (OIA) fiscal year risk assessment and work plan of the university. Additionally, the Committee, in consultation with the Chancellor, shall approve the budget and staffing level necessary to execute the plan.

The proposed work plan is designed to reduce the university's exposure to adverse risks, ensure the adequacy of internal controls, assess compliance, and evaluate economies and efficiencies of operations. The work plan was developed through risk assessment processes completed by the OIA.

The work plan classifies internal audit engagements for completion addressing a cross-section of significant risks identified by the OIA risk assessment exercise. Collectively, the OIA's risk assessment encompassed the evaluation and consideration of university operations, the Top Five ERM Institutional Risks, potential risks impeding strategic objectives of CAROLINA NEXT a survey of leadership on risk and audit perspectives, a financial magnitude assessment, and an external assessment of industry risks. Outcomes determined the 27 audit engagements populating Carolina's Fiscal Year 2024 Internal Audit Work Plan.

Additionally, the Vice-Chancellor for Finance and Operations has designated appropriate budgeted funds necessary to support the work plan providing for OIA staffing of 8 full-time-equivalent employees.

**Assessment:**

It is recommended the Committee approve the *University of North Carolina at Chapel Hill Risk Assessment and Fiscal Year 2024 Internal Audit Work Plan* and the budgeting and staffing level necessary to execute the plan. Signatory approval is to be documented by the Committee Chairman and the Chancellor.

**Action:**

This item requires a vote by the Committee and a vote by the full Board of Trustees.



The University of North Carolina at Chapel Hill  
Office of Internal Audit

---

***RISK ASSESSMENT AND  
FISCAL YEAR 2024  
INTERNAL AUDIT  
WORK PLAN***

---

Board of Trustees  
Audit, Compliance, and Risk Assessment Committee

W.M. Kotis, III, Chair  
Malcolm K. Turner, Vice Chair  
John P. Preyer  
Allie Ray McCullen

Dean A. Weber, CIA, CRMA  
Chief Audit Officer

## Preface

The Office of Internal Audit (OIA) developed the University of North Carolina at Chapel Hill's *Risk Assessment and Fiscal Year 2024 Internal Audit Work Plan*. The document is presented to the Chancellor and the University Board of Trustees Audit, Compliance, and Risk Management Committee for review and recommended approval by the Board of Trustees, whereby directing the professional talent and resources of the OIA through the completion of identified internal audit engagement activities.

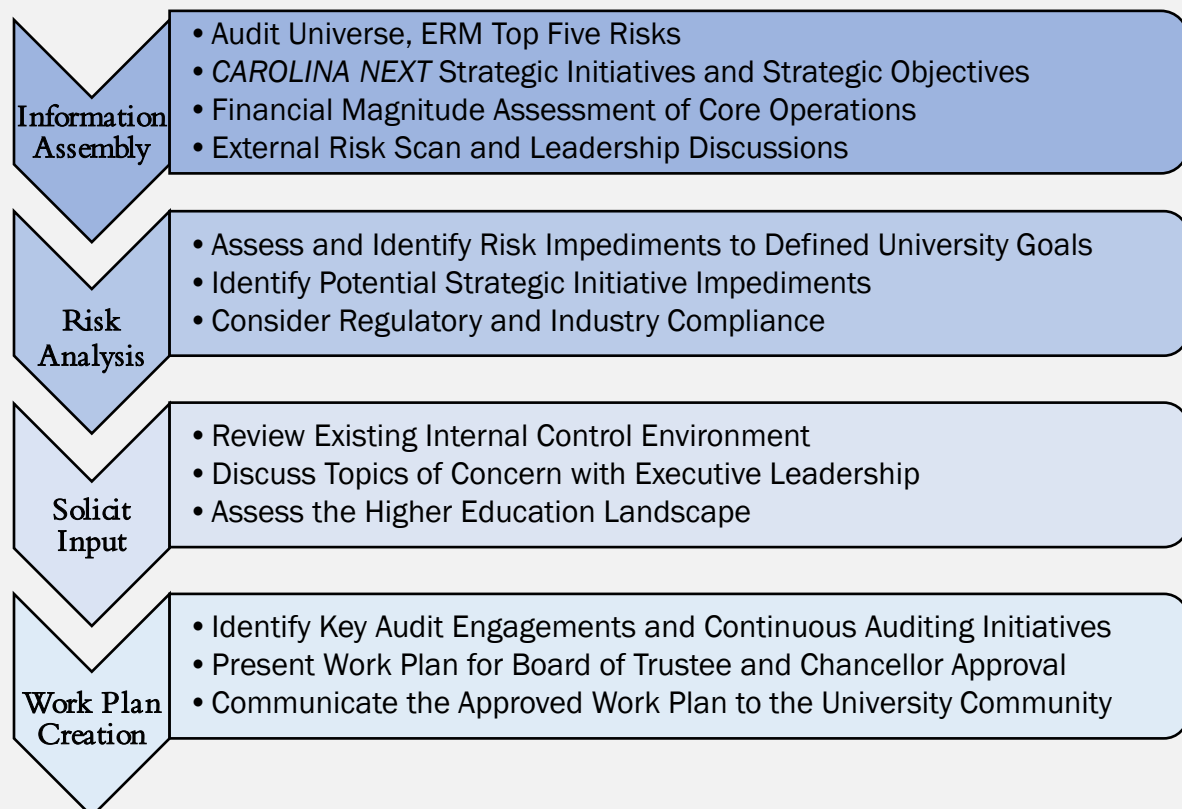
## Purpose of the Risk Assessment and Internal Audit Work Plan

The OIA completes a high-level risk assessment as the foundation for the development of the University's internal audit work plan as required by the Institute of Internal Auditors' *International Standards for the Professional Practice of Internal Auditing*. The risk assessment affords the prioritization of internal audit engagement activities addressing the timely review of operations potentially possessing the greatest level of adverse risk exposure to university operations.

The internal audit work plan defines project engagements of key university operations where institutional risk mitigation is supported through the completion of internal audit activities.

## Work Plan Development Process

The Work Plan is built upon an OIA analysis of existing and emerging risks. This comprised exercises identifying the University's *ERM Register of Top Five Institutional Risks* (including a senior leadership risk survey), potential risk impediments of the University's strategic plan *CAROLINA NEXT – Innovations For Public Good*, a financial magnitude risk assessment, and current issues impacting higher education. Additionally, the Board of Trustees, Chancellor, Provost, and members of executive leadership were consulted to provide input.





# North Carolina System Policy - University Enterprise Risk Management & Compliance Survey

UNC System Board of Governors' Policy 1300.7, *University Enterprise Risk Management and Compliance* directing the establishment of an institution-based enterprise risk management and compliance process was considered in the development of the *Fiscal Year 2024 Internal Audit Work Plan*.

The OIA was instrumental in supporting the Office of Institutional Integrity and Risk Management in the development and distribution of a survey to the Chancellor's and Provost's cabinets and other senior leaders. The process obtained feedback and opinion on 34 potential Enterprise Risk Management (ERM) topics. The 34 risks were scored by survey respondents considering (1) the likelihood of occurring, (2) the risk impact if the event occurred, and (3) the vulnerability/preparedness of the University to address the risk. Results provided an executive-level assessment of potential ERM institutional risks at Carolina for the formation of Carolina's Top Five ERM Topics. The University's *Top Five ERM Institutional Risks* identified for submission to the UNC System Office are detailed in the following chart.

Risk Rank	Chapel Hill Risk Title	System Office Risk Category
One	Employee Retention – Salaries & Benefits	Talent Management
Two	Facilities Maintenance – Campus Infrastructure Backlog	Property
Three	Information Technology Security	Cyber Security
Four	Student Mental Health and Emotional Health Resources	Mental Health
Five	Decentralized Campus Operations and Unit Decision-Making Structures	Business Practice

The OIA next identified areas and departments of campus operations underpinning the five identified ERM institutional risk topics for the University. The following chart details the OIA's opinion of the primary campus area/department with activities pertaining to each risk topic.

The chart highlights university operating areas/departments underpinning the *Top Five ERM Institutional Risks* as determined by the OIA and considered in internal audit engagement planning.

Risk Category	Area/Department
Talent Management	Human Resources
Business Practice	Senior Leadership/Finance & Operations
Property	Facilities/Finance & Operations
Cyber Security	Information Technology
Mental Health	Senior Leadership/Support Services/Student Affairs

# CAROLINA NEXT – INNOVATIONS FOR PUBLIC GOOD

The University's strategic plan, *CAROLINA NEXT: Innovations for Public Good*, provides the roadmap for guiding investment and decision-making. "The strategic plan aims to turn the University's vision and aspirational goals into readily understood, significant, implementable, measurable strategic initiatives and opportunities." The University Board of Trustees endorsed Carolina Next: Innovations for Public Good in January 2020. An annual report of Carolina Next activity was published in 2021, and 2022 marks the third year of the strategic plan.

The strategic plan is built around eight major *strategic initiatives*. In 2022, the plan envisioned a new focus supporting *Three Priorities*, encompassing the *strategic initiatives*. The enhanced vision is portrayed in the graphic (below) detailing the linkage of initiatives to priorities.

## Priorities

### 1. Career development for faculty, staff, and students

Carolina will be a place where all members of our community know they earned their place; prepares students for a variety of career paths with confidence for success; and fosters career growth and development of faculty and staff with pathways for upward mobility and leadership opportunities.

### 2. Research and innovation powerhouse

Carolina will be a place where our research scholars lead in solving the world's most challenging problems through creative collaboration

### 3. Civil discourse

Carolina will be a place where students, staff, and faculty regularly and comfortably engage in meaningful civil discourse, as well as a place where everyone knows their voice matters.

## Strategic Initiative(s)



The Fiscal Year 2024 Internal Audit Work Plan contains engagements with linkage to the *Three Priorities*. Audit engagement topics were identified and determined through the OIA risk assessment exercise designed to ensure alignment of OIA work in support of *CAROLINA NEXT*.





## OIA Survey - Leadership's Identification of Audit Risk Topics

An important component in the development of Carolina's Internal Audit Work Plan included the Office of Internal Audit obtaining input from senior leadership regarding perspectives on key risk topics and areas where internal audit services can be effective in evaluating procedures, internal controls, and processes to strengthen operations.

An automated survey was distributed to 171 senior leaders (Board of Trustees, Chancellor's & Provost's Cabinet, and Department Leaders) of the university to solicit leadership's perspective of risks. The survey focused on nine distinct operational areas comprising (1) Athletics, (2) Research, (3) Information Technology & Systems, (4) Instruction, Academics & Outreach, (5) Human Resources Management, (6) Development, (7) Student Affairs, (8) Fiscal & Asset Management, and (9) Other University Operations.

The OIA calculated response percentages for each audit risk topic based on respondents' selections. The 107 audit risk topics were then grouped within risk categories of HIGH, MEDIUM, and LOW based on scored results. Outcomes identified 21 HIGH, 34 MEDIUM, 42 LOW audit risk topics, and 10 uncertain responses. Respondents could also self-identify specific risk concerns they believed may benefit from an objective evaluation by the OIA. The following chart details the highest-scoring risk topics. The top-ranked risks are identified in the following chart.

Audit Risk Topic	Operational Area	Response Percent	Risk Ranking
Great Resignation and The UNC Employment Market	Human Resource	75.41%	High >30%
Campus-Wide Space and Office Planning	Fiscal	65.57%	
Anxiety, Depression, and Mental Health Concerns	Safety/Security	65.00%	
Deferred Maintenance of Campus Infrastructure	Fiscal	62.30%	
Threat Assessment and Response (shooter/violence/bomb)	Safety/Security	56.67%	
Strategic Enrollment, Housing, and Accessibility Planning	Academics	55.56%	
UNC Employment Desirability (Benefits, Wages, Parking, etc.)	Human Resource	50.82%	
Remote Work Facilities Restructuring/Decommissioning	Human Resource	45.90%	
Information Technology Security (Cybersecurity)	Info Technology	45.00%	
Security Risks Over Data	Info Technology	40.00%	
Student Conduct/Crimes Operational Processes	Student Affairs	39.34%	
Accommodating Students Seeking Support Resources	Student Affairs	39.34%	
Compliance and Institutional Governance Structure	Governance	36.67%	
Diversity and Inclusion Issues of Students, Faculty, and Staff	Other Operations	36.67%	
Career Development for Faculty, Staff, and Students	Human Resource	36.07%	
Campus Security Cameras	Safety/Security	35.00%	
Campus Unit Funding and Budgeting Model	Fiscal	34.43%	
Alignment of Personnel and Budget to Support Initiatives	Fiscal	34.43%	
Post-Pandemic Student Expectations of Instructional Modes	Academics	31.75%	
Athletics Name Image Likeness	Athletics	31.25%	
Campus-wide Civil Discourse	Governance	30.00%	

## Financial Magnitude of Core University Areas

The OIA assessed financial data from the 2022 *UNC-Chapel Hill Annual Financial Report* highlighting 10 core components of university operations (revenues/expenses). These include significant funding sources and/or consumption of institutional resources.

Category Area	Financial Impact FY2022	Operational Considerations
Grants & Contracts (Operating) Revenue	\$1,019,720,178	Award Compliance and Monitoring
State Appropriations Revenue	\$587,593,407	Public Dollar Stewardship Institutional Reputation/Compliance
Patient Services Net Revenue	\$571,348,255	Operational – Accounting for billing/receipts/bad debt
Student Tuition & Fee Revenue	\$464,123,452	Core Business Function Recruitment/Diversity/Retention
Net Investment Income Revenue	(\$63,588,367)	Financial Stewardship
Sales & Services Auxiliary Enterprise Revenue	\$423,720,683	Ancillary Funding Streams Supporting Operations
Salaries and Benefits Expense	\$1,806,973,414	Largest Resource Expenditure
Procurement Expense (Services/Supplies/Materials)	\$1,107,497,548	State and University Regulatory Compliance
Scholarship/Fellowship (Financial Aid) Expense	\$132,926,511	Federal and State Compliance
Utility Expense	\$82,906,044	Operational Expense – Consumable Product, Energy Consumption

A financial analysis of the university's Colleges, Schools, and Libraries was completed. The chart to the right details the total fiscal year 2022 expenditures (including transfers) for each of the academic units listed.

Financial amounts reflect ConnectCarolina recorded expenditures on June 30, 2022, with amounts provided to the OIA by Accounting Services.

These academic units comprise a significant portion of total fiscal year institutional expenditures.

Academic Unit	FY 2022 Expenses
College of Arts and Sciences	\$437,575,059
Kenan-Flagler Business School	195,909,764
School of Education	22,443,813
School of Journalism	24,174,136
School of Law	35,413,851
School of Information & Library Science	14,161,912
School of Government	27,489,054
School of Social Work	25,602,802
Graduate School	26,360,636
Summer School Admin	4,467,110
School of Medicine	1,702,648,642
School of Dentistry	74,401,938
School of Nursing	28,859,679
School of Pharmacy	81,253,926
School of Public Health	155,552,631
University Libraries	54,527,140
<b>Total Expenditures FY 2022</b>	<b>\$2,910,842,093</b>

## External Risk Evaluation – Industry-wide Higher Education Environment

The National Association of College and University Business Officers reported on Higher Education's Top Five Business Issues of 2022. These include and listed in no particular order, (1) Supporting and Maintaining the Workforce, (2) Meeting Students' Evolving Needs, (3) Providing a Secure and Modern Technology Infrastructure, (4) Managing an Uncertain Economic Climate, and (5) Navigating Resource Constraints.

Additionally, the Institute of Internal Auditors released the *2023 North American Pulse of Internal Audit* report of information and perceptions from internal audit leaders on a national scale. For the Public Sector and Nonprofit sector, the top five trends for risk are centered on cybersecurity, information technology, third-party relationships, compliance/regulatory, and operational processes.

The United Educators published *The Large Loss Report 2023*, highlighting a summary of major damage awards and settlements of at least \$1 million affecting K-12 schools, colleges, and universities in 2022. Key areas of risk resulting in settlements include:

- Accidents or Crimes Resulting in Death
- Bullying
- COVID-19
- Defamation
- Discrimination
- Due Process
- False Advertising/Unfair Competition
- Inappropriate Fees
- Injuries Not Resulting in Death
- Late Fees
- Whistle-Blowers
- Other Major Losses
- Retaliation
- Overtime and Bonuses
- Ransomware
- Retirement Plans
- Sexual Discrimination
- Sexual Harassment
- Sexual Misconduct
- Toxic Exposure
- Wrongful Termination
- Unpaid Work

PwC published *Perspectives in Higher Education (spring 2022)* The publication shared insights into the key challenges and related opportunities facing colleges and universities. The topics addressed (1) Environmental Social and Governance, (2) Enterprise and Integrated Risk Management, (3) Cybersecurity Considerations, (4) The Digital University, (5) A Washington Update, (6) the Risk of Fraud in Higher Education, (7) Preparing Tomorrow's Leaders Today, and (8) Building a Culture of Trust.

## Summary

Collectively, the OIA's risk assessment encompassed evaluation and consideration of university operations, the *Top Five ERM Institutional Risks*, potential risks impeding strategic objectives of *CAROLINA NEXT- Innovations for Public Good*, a survey of executive leadership on risk and audit perspectives, a financial magnitude assessment, and an external assessment of industry risks. Outcomes determined the 27 audit engagements addressing high and moderate risks in populating Carolina's *Fiscal Year 2024 Internal Audit Work Plan*. Additionally, the Work Plan maintains budgeted staff hours for the completion of six special project requests arising during the year.

# University of North Carolina at Chapel Hill

## Fiscal Year 2024 Internal Audit Work Plan Engagements

Audit Engagement	Risk Category	Risk Scale	Audit Functional Area	Supportive Rationale
CampDoc Software Implementation	Consulting	Moderate	Office of Protection of Minors	Leadership Request
Student Financial Aid Award Letters	Consulting	Moderate	Office of Scholarships and Student Aid	Leadership Request
Administrative Space Inventory (Hybrid Work)	Operational	High	Facilities Services	Leadership Survey Risk
UNC Campus Recreation	Operational	Moderate	Student Affairs	ERM Survey/Leadership Survey Risk/External Landscape
Carolina Housing	Operational	High	Student Affairs	ERM Survey & External Risk Landscape
Undergraduate Student Advising/Career Counseling Center	Operational	High	University Career Services	Carolina Next – Priority 1/Leadership Survey Risk/External Risk Landscape
Campus Infrastructure Deferred Maintenance	Operational	High	Facilities Infrastructure	Top Five ERM & Leadership Survey Risk
Carolina Blue Employee Benefit Elections	Operational	Moderate	Human Resources and Equal Opportunity and Compliance	Leadership Survey Risk
Strategic Enrollment Planning	Operational	High	Undergraduate Admissions	Leadership Survey Risk
Automated External Defibrillator Inventory	Operational	Moderate	Campus Safety	ERM Survey
Fraternity & Sorority Life	Operational	Moderate	Student Affairs	ERM Survey
2U Contract	Financial	Moderate	Office of the Provost/Kenan Flagler Business School	Leadership Survey Risk
Aging Accounts Receivables	Financial	Moderate	Financial Accounting	Financial Magnitude & UNC KPI Compliance
Associated Entities MOU	Financial	Moderate	Finance and Operations	Leadership Survey Risk
Business Unit Funding Model	Financial	High	Finance and Operations	Top Five ERM

Audit Engagement	Risk Category	Risk Scale	Audit Functional Area	Supportive Rationale
The Ackland Art Museum	Financial	Moderate	Office of the Provost	Carolina Next - Build our Community Together
Game Day Stadium Activities	Financial	Moderate	Athletics	Leadership Survey Risk
PlayMakers Repertory Company	Financial	Moderate	College of Arts & Science	Financial Magnitude (College)
IT Audit Services for Cybersecurity using Nessus Professional	Technology	High	Information Technology Services	Top Five ERM/Leadership Survey Risk/External Risk Landscape
Technical Controls for PCard Purchases Related to IT Products and Services	Technology	Moderate	Information Technology Academic School(s)	Leadership Survey Risk & Carolina Next Optimize Operations
IT Access Controls for Affiliates	Technology	Moderate	Information Technology UNC Associated Entity	Leadership Survey Risk/External Risk Landscape/ Carolina Next Optimize Operations
IT Key Controls Review	Technology	Moderate	Information Technology Academic School(s)	Leadership Survey Risk & Carolina Next Optimize Operations
Foreign Gift and Contract Reporting	Compliance	High	Institutional Integrity & Risk Management	Carolina Next – Priority 2 & External Risk Landscape
Subrecipient Monitoring	Compliance	Moderate	Office of Sponsored Programs	External Risk Landscape & Financial Magnitude
Clinical Trials	Compliance	High	Office of Clinical Trials	Carolina Next - Priority 2
Athletic Name Image Likeness	Compliance	High	Carolina Athletics	Leadership Survey Risk/ERM Survey/External Risk Landscape
Grant Award Terms and Conditions	Compliance	Moderate	Office of Sponsored Programs (Gillings School of Public Health Grants)	Financial Magnitude/Carolina Next – Priority 2/Leadership Survey Risk
<b>Special Project Engagements<sup>1</sup></b>	Various	--	Various	Needs of University leadership to be determined.

\* The Risk Scale rating is subjective and is determined by the Office of Internal Audit Risk Assessment.

<sup>1</sup> The Fiscal Year 2024 Internal Audit Work Plan maintains budgeted hours (280/project) available to complete six (6) Special Project Engagements (audit requests, investigations, consultations, etc.) as the need may arise, and engagements are approved, during the course of the fiscal year.



# Fiscal Year 2024 Risk Assessment and Audit Plan

## Available Budget and Project Hour Summary

While the initial work plan is developed based on a structured risk assessment process, risks may evolve throughout the year. Therefore, the OIA monitors changes at the university level and within the higher education sector. Fluctuations of a significant nature in risk and/or audit staffing levels may necessitate revisiting the Fiscal Year 2024 Work Plan with the *Audit, Compliance, and Risk Assessment Committee*, as appropriate.

At present, the OIA is professionally staffed by the Chief Audit Officer, three Audit Supervisors, one Information Technology Auditor, and two Staff Auditors.

The Vice-Chancellor for Finance and Operations has designated fiscal year 2024 budgeted funds necessary to support the work plan providing for OIA staffing of up to 8 full-time-equivalent professional audit staff, an increase from the prior fiscal year. Recruitment is anticipated to occur during the fiscal year.

### Work Plan Hourly Detail

Total Available Audit Hours	14,560
(7 auditors @ 2,080 hours)	
Less Employee Leave	-1,680
(Annual/Sick/Holiday)	
Less Work Plan Hours	-9,340
Less Non-Work Plan Hours *	-2,542
Less Audit-Related Duties	
(QAR/Committees/Etc.)	<u>-898</u>
Project Hours Available/Short	<u>100</u>

### \* Auditor Non-Work Plan Hours

Prior Finding Follow-up	280
Work Paper Peer Review	792
Professional Development	280
UNC Training	280
Routine Consultations/Admin	<u>910</u>
Total Hours	<u>2,542</u>

Engagement Project	Budgeted Hours
<b>Consulting /Advisory (2)</b>	
CampDoc Software Implementation	280
Student Financial Aid Award Letters	280
<b>Operational (9)</b>	
Administrative Space Inventory	280
UNC Campus Recreation	280
Carolina Housing	280
Undergraduate Career Counseling Center	280
Campus Deferred Maintenance	280
Employee Carolina Blue Benefit Elections	280
Strategic Enrollment Planning	280
Automated External Defibrillator Inventory	280
Fraternity & Sorority Life	280
<b>Financial (7)</b>	
2U Contract	280
Aging Accounts Receivable	280
Associated Entity MOU	280
Business Unit Funding Model	280
The Ackland Art Museum	280
Game Day Stadium Activities	280
Playmakers Repertory Company	280
<b>Technology (4)</b>	
IT Audit Services for Cyber Security	280
Technical Controls for Pcard IT Purchases	280
IT Access Controls for Affiliated Entities	280
IT Key Controls Review (Academic )	280
<b>Compliance (5)</b>	
Foreign Gift and Contract Reporting	280
Subrecipient Monitoring	280
Clinical Trials	280
Athletic Name Image Likeness	280
Grant Award Terms and Conditions	280
Special Projects (6 Projects @ 280 Hours)	1,680
FY23 Carry-Over Engagement Work	<u>100</u>
<b>Total Work Plan Budgeted Hours</b>	<u><u>9,340</u></u>

Approval providing for the completion of engagements populating the *Office of Internal Audit Fiscal Year 2024 Internal Work Plan* for Carolina and for the budget and staffing level necessary to execute the plan.

---

W.M. Kotis, III  
Audit, Compliance, and Risk Management Committee Chairman

---

Date

---

Kevin M. Guskiewicz  
Chancellor

---

Date

# Office of Internal Audit

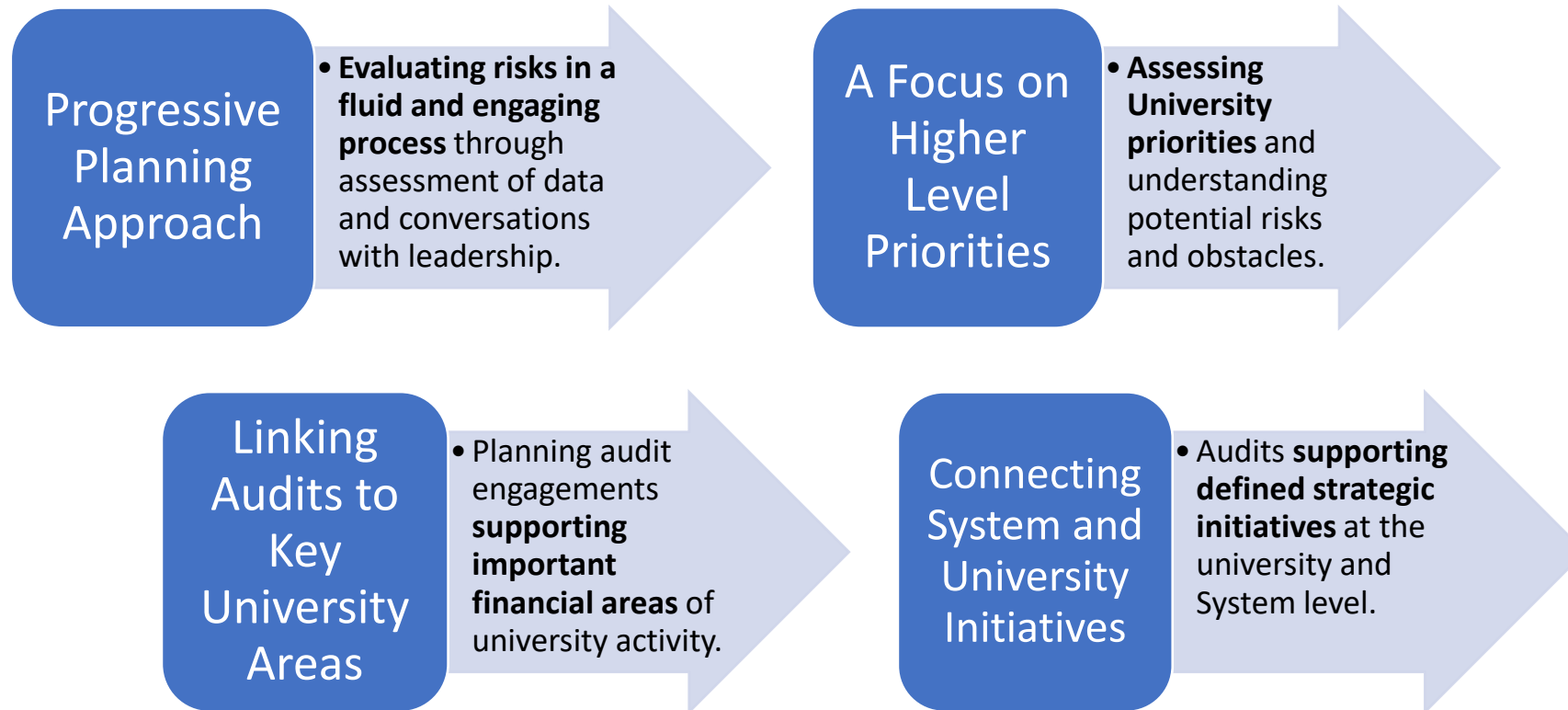
---

*The UNIVERSITY of NORTH CAROLINA  
at CHAPEL HILL*

*Dean Weber, CIA, CRMA  
Chief Audit Officer  
May 17, 2023*

# Risk Assessment and Fiscal Year 2024 Internal Audit Work Plan

---



# Risk Assessment and Fiscal Year 2024 Internal Audit Work Plan



- Audit Universe
- ERM Top Five Risks
- External Risk Scan
- *CAROLINA NEXT*
- Leadership Survey
- Financial Magnitude Assessment
- Assess Risk Impediments to University Goals
- Identify Potential Strategic Initiative Impediments
- Consider Regulatory and Industry Compliance
- Audit, Compliance, and Risk Management Committee Chairman
- Review Control Environment with the Executive Leadership
- Topics of Concern from Senior Leaders
- Key Audit Engagements and Continuous Auditing Initiatives
- Work Plan for Board of Trustees and Chancellor Approval
- Communicate the Approved Work Plan



# Risk Assessment and Fiscal Year 2024 Internal Audit Work Plan

## System Policy on University Enterprise Risk Management and Compliance

Audit researched **2023 Higher Education Risk profiles** in crafting a risk assessment tool for Carolina to use in gauging an understanding, alignment, mitigation, and optimization of trending risk drivers

The OIA and the Office of Vice Chancellor for Institutional Integrity and Risk Management surveyed the Chancellor's and Provost's cabinet on 34 potential ERM topics with results driving the development of Carolina's Top Five ERM Topics for FY2023.

The chart highlights operating areas/departments underpinning the **Top Five ERM Institutional Risks** as determined by the OIA and considered in internal audit engagement planning.

Risk Category	Area/Department
Talent Management	Human Resources
Business Practice	Senior Leadership/Finance & Operations
Property	Facilities/Finance & Operations
Cyber Security	Information Technology
Mental Health	Senior Leadership/Support Services/Student Affairs

# Risk Assessment and Fiscal Year 2024 Internal Audit Work Plan

Supporting UNC System Board of Governors' Policy 1300.7, the Vice Chancellor of Institutional Integrity and Risk Management will submit the University's *Top Five ERM Institutional Risks* to the System Office. The following chart details Carolina's fiscal year 2023 enterprise risks.

Risk Rank	Chapel Hill Risk Title	System Office Risk Category	Eight work plan engagements support the rationale linked to mitigating the <i>Top Five ERM Institutional Risks</i> and other ERM identified risks.
One	Employee Retention – Salaries & Benefits	Talent Management	
Two	Facilities Maintenance – Campus Infrastructure Backlog	Property	
Three	Information Technology Security	Cyber Security	
Four	Student Mental Health and Emotional Health Resources	Mental Health	
Five	Decentralized Campus Operations and Unit Decision-Making Structures	Business Practice	

# Risk Assessment and Fiscal Year 2024 Internal Audit Work Plan

## CAROLINA NEXT – INNOVATIONS FOR PUBLIC GOOD

### Risk Assessment of Strategic Objectives

- Assess the strategic plan, *CAROLINA NEXT*, to identify and consider risks that could potentially impede the realization of desired strategic objectives.

#### Priorities

**1. Career development for faculty, staff, and students**

Carolina will be a place where all members of our community know they earned their place; prepares students for a variety of career paths with confidence for success; and fosters career growth and development of faculty and staff with pathways for upward mobility and leadership opportunities.

**2. Research and innovation powerhouse**

Carolina will be a place where our research scholars lead in solving the world's most challenging problems through creative collaboration

**3. Civil discourse**

Carolina will be a place where students, staff, and faculty regularly and comfortably engage in meaningful civil discourse, as well as a place where everyone knows their voice matters.

#### Strategic Initiative(s)



Eight work plan engagements support the assessment of potential risk impediments of CAROLINA NEXT

# Risk Assessment and Fiscal Year 2024 Internal Audit Work Plan

---

## *Leadership's Survey of Audit Risk Topics*

### Operational Areas Assessed

- Athletics
- Research
- Information Technology
- Instruction/Academics
- Human Resources
- Development
- Student Affairs
- Fiscal & Asset Management
- Other University Operations

- Automated survey distributed to 171 senior leaders of the university to obtain leadership's perspective on risks impacting the University and/or their individual areas of oversight.
- The survey focused on nine distinct operational areas comprising 107 overall audit risk topics.
- The 107 scored risks recognized 21 HIGH, 34 MEDIUM, 42 LOW audit risk topics, and 10 uncertain responses. The fiscal year 2024 work plan links **fifteen proposed audit engagements** to leadership's high-scored risks.

# Risk Assessment and Fiscal Year 2024 Internal Audit Work Plan

---

## *Financial Magnitude and Higher Education Environment Assessment*



The OIA assessed financial data for 10 core components of University operations (revenues/expenses) and expenses of the 16 academic units for the fiscal year ended June 30, 2022. These comprise significant funding sources and/or the consumption of institutional resources. **Four proposed work plan engagements support financial assessment rationale.**



Evaluated noteworthy risks impacting the Higher Education Industry environment. Sources include:

- NACUBO
- Institute of Internal Auditors
- United Educators
- Price Waterhouse Coopers – Higher Education Sector

**Eight proposed work plan engagements are linked to the external assessment.**



# Risk Assessment and Fiscal Year 2024 Internal Audit Work Plan

## Defined Engagements by Audit Category (33 projects)

### Operational Audit (9 audits)

- Administrative Space Inventory
- UNC Campus Recreation
- Carolina Housing
- Undergraduate Career Counseling Center
- Campus Deferred Maintenance
- Employee Carolina Blue Benefit Elections
- Strategic Enrollment Planning
- Automated External Defibrillator Inventory
- Fraternity & Sorority Life

### Compliance Audits (5 audits)

- Foreign Gift and Contract Reporting
- Subrecipient Monitoring
- Clinical Trials
- Athletic Name Image Likeness
- Grant Award Terms and Conditions

### Special Projects/Investigations (6)

- Identified as Need Determines

### Financial Audits (7 audits)

- 2U Contract
- Aging Accounts Receivable
- Associated Entity MOR
- Business Unit Funding Model
- The Ackland Art Museum
- Playmakers Repertory Company
- Game Day Stadium Activities

### Information Technology (4 audits)

- IT Audit Services Cyber Security
- Technical Pcard Controls
- IT Access Controls for Affiliates
- IT Key Controls Review

### Consulting Engagements (2)

- CampDoc Software Implementation
- Student Financial Aid Award Letters

### THE COMPLETION GOAL:

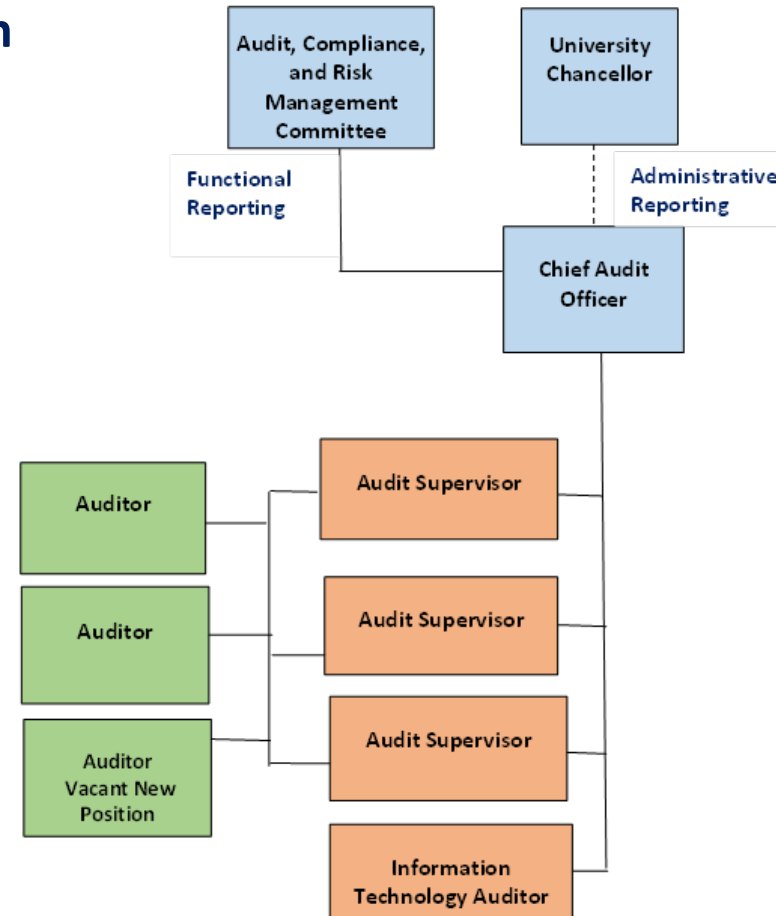
**100%** - would be ideal...**75% to 80%** would be successful.

The Office of Internal Audit anticipates approximately 2 carry-over engagements ongoing at June 30, 2023, but not yet completed. These engagements will be completed in the first quarter of FY2024.

# Risk Assessment and Fiscal Year 2024 Internal Audit Work Plan

## Departmental Staffing and Organization

- The *Board of Trustees, Audit, Compliance, and Risk Management Charter and Office of Internal Audit Charter* require approval, in consultation with the Chancellor, of the budget and resources necessary to execute the University's internal audit plan.
- Department is currently staffed at 7 FTE.
- The Fiscal year 2024 budgeted staffing complement supports at least 8 FTE professionals.
- The Vice Chancellor for Finance and Operations designated funding necessary to support the Office of Internal Audit's operations for FY2024, including funding for the hiring of additional staffing. Work Plan engagements are driven by resourcing limitations.



# Risk Assessment and Fiscal Year 2024 Internal Audit Work Plan

---

## Recommended Action:

A motion authorizing the Audit, Compliance, and Risk Management Committee to approve the *Office of Internal Audit's **Risk Assessment and Fiscal Year 2024 Internal Audit Work Plan for Carolina*** and for the budget and staffing level necessary to execute the plan. Signatory approval to be documented by the Committee Chairman and the Chancellor.

**AGENDA ITEM**

*Information Item 1*      ***IT Security Issues and Program Update***

**Situation:** Provided for Committee awareness is a Cyber Security informational update and overview.

**Background:** The Office of Information Technology Services will introduce the new security leader for Carolina and provide an outline of the go-forward approach to reporting the university's cyber risk management. The presentation supports the Audit, Compliance, and Risk Management Committee's Charter requiring periodic updates on information technology governance and security.

**Assessment:** N/A

**Action:** This item is for information only and does not require a vote by the Committee.



INFORMATION  
TECHNOLOGY SERVICES

# CYBERSECURITY UPDATE

May 2023



**MIKE BARKER**

VICE CHANCELLOR FOR INFORMATION TECHNOLOGY  
AND CHIEF INFORMATION OFFICER

**PAUL RIVERS**

ASSISTANT VICE CHANCELLOR AND  
CHIEF INFORMATION SECURITY OFFICER





## Today's Discussion

Introduce the new security leader for Carolina

Outline the go-forward approach to reporting  
the university's cyber risk management

### Cybersecurity program mission

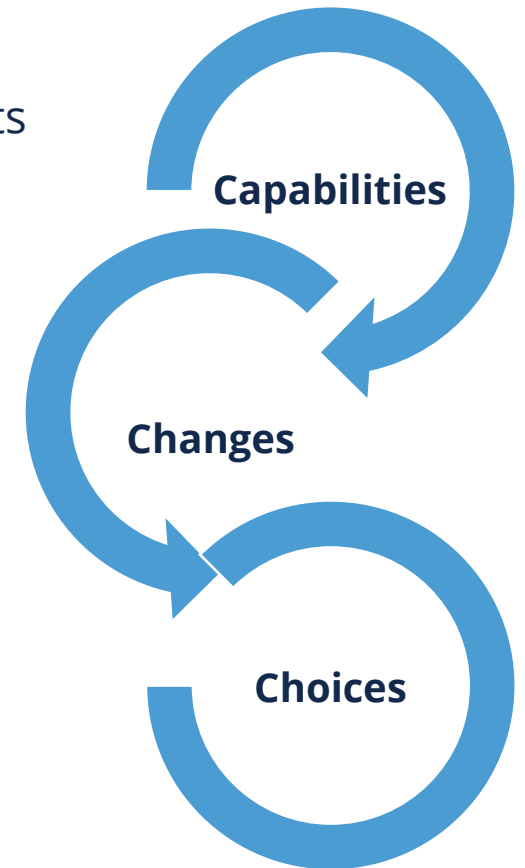
1. **Coordinate** the institutional response to cyber threats
2. **Protect** the institution from harm by reducing the rate and impact of cyber events
3. **Report** the status of managing the institution's cyber risk

### Annual reporting objectives

1. **Capabilities** - Summarize the effectiveness of the Carolina security program
2. **Changes** - Identify significant cybersecurity threat landscape changes
3. **Choices** - Outline the institution's response to the changing threat landscape

### Annual reporting format

- Concise written document of 4-6 pages with supporting appendices
- Organize the document by the above reporting objectives
- Provide the document in advance of January meetings



## QUESTION ONE: How capable is our security program?

Addressing capability answers questions such as:

- Are we able to **identify** threats, critical technology, and vulnerabilities in time?
- Do we have consistent, risk-differentiated, and layered defenses to **protect** the technology underpinning mission critical work?
- What kind of attacks can we **detect**, and what kinds are invisible to our current detection capabilities?
- Are we able to quickly **respond** to a broad range of scenarios in order to limit damage?
- After appropriate cyber response, are we able to **recover** services with sufficient speed to limit organizational impact?

**Capability and maturity** are loosely correlated but distinct

- Maturity does not directly address the previous questions
- Security capability is a result of which controls to implement where and at what strength
- Control strength and depth determines our cyber resilience

**Desired control strength and depth** requires balance – more is not always better (or required)

- Trade-off between cost and convenience against urgency and impact of identified threats
- Trade-off factors are multi-dimensional  
*Guideline vs guard rail, manual vs automated, local vs central oversight, sampled vs full coverage, single layer vs multiple layers of defense*

**Industry standard frameworks** as the basis for analyzing capabilities and the underlying control choices

- ISO27000 and NIST Cybersecurity Framework (CSF)
- Providing a consistent year-over-year program “yardstick”
- Essential for demonstrating due care

### For the January 2024 Committee Update

1. Document methodology for assessing Carolina security capabilities using industry-standard frameworks
2. Document the current state of security capabilities using this methodology
3. Complete a program self-assessment to propose a target state of security, with rationale

## QUESTION TWO: What changes require a reconsideration of security priorities?

Three broad categories of change impacting cybersecurity

- Legal, regulatory, and compliance
- Tools, tactics, procedures, and motivations of adversaries
- New technology or used in new ways

### **For the January 2024 Committee Update**

Provide a summary of threat landscape changes in 2023



## QUESTION THREE: What is the organization's response to change?

### Legal, regulatory, compliance

What is being done to respond to growing cybersecurity regulations for research?

What cyber regulatory requirements are impacting research, or how do we respond to Whitehouse edicts on research security?

### Tools, tactics, procedures, and motivations of adversaries

How have security incidents at this institution, other universities, or world-wide changed best practice?

What does industry data say about breach trends and root cause?

### Changing technology and its use

How do we secure emerging technologies, such as cloud-based machine learning systems?

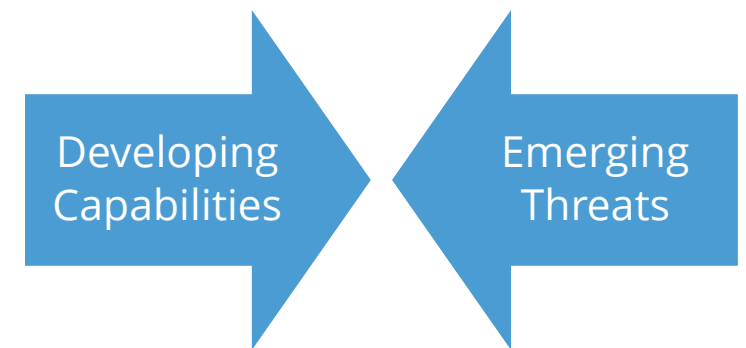
How have we responded to an increasingly distributed workforce?

Report addresses the following:

- **Rationale** - What options did we consider, which was selected, and why? What will we **not** do?
- **Resources** - Besides effectiveness, how did we consider efficiency of the selected option?
- **Timeline** - How is this response prioritized, and when will we deliver the new capabilities?

### For the January 2024 Committee Update

Document the prioritized roadmap to move the institution from the current to target state





# Ongoing development of the report

Expand the report between each reporting cycle:

- **Delivery** - What capabilities were delivered or enhanced since last update, and are we on track per plan?
- **External validation** - Alternate between self-assessment and external assessment of current capabilities on a set cadence – do external parties confirm our view?
- **Efficiency** - Analyzing program efficiency and resource requirements as a fundamental part of operations – how do we make the most of limited resources?
- **Peer benchmarks** - How do we compare to other research institutions in security capability and efficiency?
- **Organizational dynamics** – How are security industry best practices adapted to the requirements of a research university – how is Carolina (and research universities) unique compared to other industries?
- **Deep dives** – What significant incidents have occurred at Carolina or beyond, which motivate new program priorities?

### Summary of actions for the January 2024 update

Deliver a **written report** on the state of cybersecurity at Carolina

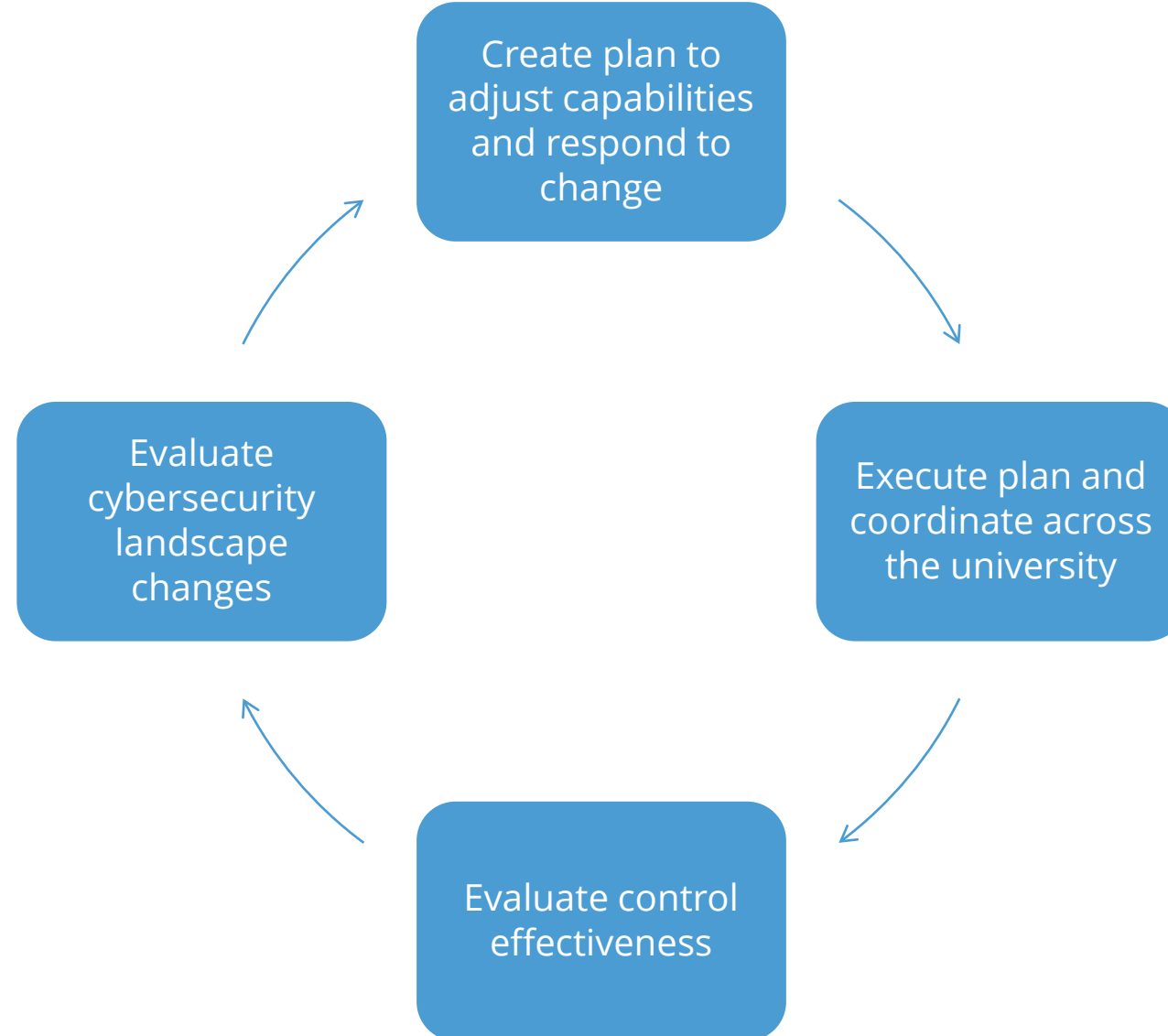
- **Concise**, at approximately 4-6 pages with appendices
- Organized in **three parts**: security capabilities, landscape changes, and institutional response

Report includes

- **Assessment methodology** for security capabilities using industry-standard frameworks
- **Current state** of security capabilities using this methodology
- **Target state** for the institution, with rationale
- **Timeline** and priority order to move the institution from the current to target state
- **Inputs** for identifying security-relevant changes

### Ongoing after January 2024

- Augment the report each cycle to broaden and deepen the perspective
- Deliver the report annually as the comprehensive view on how cyber risk is managed for the institution





**INFORMATION  
TECHNOLOGY SERVICES**





**AGENDA ITEM**

*Information Item 2*      ***Top Five Enterprise Risk Management (ERM) Risks***

**Situation:**                      Provided for Committee awareness is an informational overview of the University's compliance with UNC System Policy 1300.07, specifically the identification of the top five enterprise level risks facing the University.

**Background:**                      The UNC System requires that each constituent institution identify and submit its top five enterprise level risks. This responsibility has been jointly administered over the past several years by the Office of Internal Audit and the Division of Institutional Integrity and Risk Management.

**Assessment:**                      N/A

**Action:**                              This item is for information only and does not require a vote by the Committee.

# Enterprise Risk Management: 2023-2024

Presentation to the UNC-Chapel Hill Board of Trustees Audit, Compliance, and Risk Management Committee

May 17, 2023



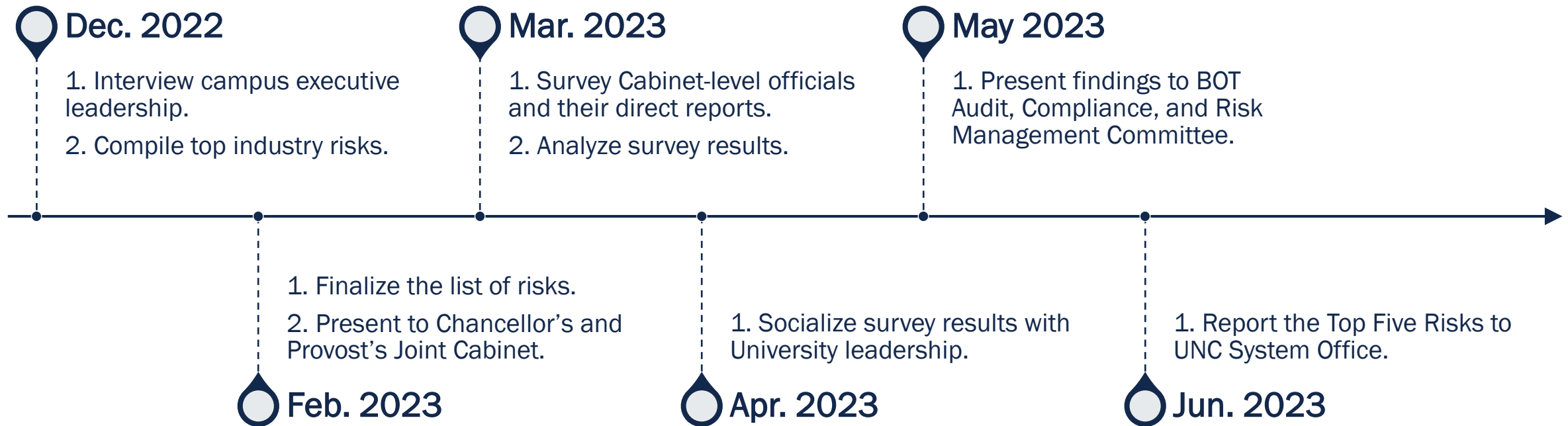
INSTITUTIONAL INTEGRITY  
AND RISK MANAGEMENT





- **UNC System Policy 1300.7**
  - “[E]ach constituent institution shall establish an enterprise risk management process that aligns with the institution’s programs, activities, and management systems and that supports the institution’s strategic and other goals.”
- **Defining “Enterprise Risk”**
  - “[T]he possibility of an issue, event or incident occurring and impacting the ability of the university to achieve its mission, strategic goals and objectives.”
- **Partnership**
  - Institutional Integrity and Risk Management
  - Internal Audit

# Timeline



# Survey Development



- Evaluated University risk landscape.
  - Interviewed campus executive leaders, and
  - Compiled risk analyses published by third parties.
- Developed risk survey questions based on identified risks.
- Discussed risks with the joint Chancellor's and Provost's cabinet.



- 34 risks, 11 risk categories.
- Each risk evaluated on:
  - Likelihood,
  - Impact, and
  - Vulnerability.
- Survey open for two weeks (14 calendar days).
- 163 participants, 70 responses (43% response rate).



- Weighted, scored, and ranked each risk by:
  - Risk Category
  - Greatest Likelihood
  - Greatest Probability
  - Greatest Impact
  - Overall Risk Score
- Combined similar risks by theme to create the Top Five Risks.

# Survey Results



Risk Rank	Chapel Hill Risk Title	System Office Risk Category
One	Employee Retention – Salaries & Benefits	Talent Management
Two	Facilities Maintenance – Campus Infrastructure Backlog	Property
Three	Information Technology Security	Cyber Security
Four	Student Mental Health and Emotional Health Resources	Mental Health
Five	Decentralized Campus Operations and Unit Decision-Making Structures	Business Practice



# Risk Advisory Committee (RAC)



- Chancellor-appointed committee.
  - Help the University comply with UNC System Policy 1300.7.
  - Identify and address enterprise-level risks.
  - Meets at least quarterly.
- Vice Chancellor of IIRM chairs RAC.
- Five subcommittees - one for each Top Five Risk.
  - Vice Chancellor of IIRM assigns a Risk Owner to chair each subcommittee.
  - Subcommittees meet monthly to assess progress in addressing their assigned risk.

# Next Steps



- Risk Owners:
  - Develop and implement responses to Top Five Risks,
  - Monitor the effectiveness of responses, and
  - Adjust responses as needed based on data.
- Risk Owners and RAC:
  - Meet quarterly to discuss risks and responses.
  - RAC Subcommittee Chairs brief BOT annually.
- Vice Chancellor for IIRM and Director of Internal Audit:
  - Provide BOT quarterly updates on risk management efforts.
  - Begin planning for next year.



# Questions?



- Vice Chancellor for Institutional Integrity and Risk Management
  - George Battle
  - [gbattle3@unc.edu](mailto:gbattle3@unc.edu)
  - 980-333-1006
- Director of Internal Audit
  - Dean Weber
  - [dweber@unc.edu](mailto:dweber@unc.edu)
  - 919-962-7883

**AGENDA ITEM**

*Information Item 3*

***Water Testing***

**Situation:** Vice Chancellor George Battle, Executive Director of Environment, Health and Safety Catherine Brennan, Director of Emergency Management and Planning Darrell Jeter will update the Committee on the status of the University's water testing program commenced in August 2022.

**Background:** The University began testing drinking water fixtures in its facilities for the presence of lead in August 2022 and completed such testing in completed in March 2023.

**Assessment:** N/A

**Action:** This item is for information only and does not require a vote by the Committee.

# 2022-23 Campus Water Lead Testing Overview

**Board of Trustees**  
**Audit, Compliance and Risk Management Committee**

**May 17, 2023**



INSTITUTIONAL INTEGRITY AND RISK MANAGEMENT

# Coordination Summary and Functional Support Highlights

DARRELL JETER

EMERGENCY MANAGEMENT AND PLANNING



# Operational Highlights



- **Carolina Housing**

- Coordinated with EHS to complete testing and remediation of drinking water fixtures in all residential buildings.
- Continues to work with EHS for regular testing, including more frequent testing in Spencer Residence Hall.

- **Facilities Services**

- Sourced and purchased 165 water coolers and 4,702 5-gallon refills.
- Deployed 120 water coolers and 4,752 5-gallon refills.
- Continues to coordinate with EHS to remediate and/or replace fixtures found with detected levels of lead.

- **Finance and Budget**

- Provided funding to support sampling, testing and remediation efforts.
- Supported procurement of water coolers, refills and replacement fixtures.
- Coordinated purchasing contract for sampling and testing.

- **Information Technology Services**

- Developed Veoci workflows for tracking water sampling at the fixture and building level and designed 10 dashboards for real-time status updates.
- Enabled start-to-finish situational awareness regarding the status, samples, results and remediation actions for each fixture.

# Operational Highlights



- **University Communications**

- Fielded approximately 50 media inquiries and hosted a well-attended press conference with George Battle and Rebecca Fry as spokespeople.
- Kept the Carolina community informed with five Formal Notice emails to students and employees, timely testing result updates through the EHS twitter account, and FAQs on the EHS website and will continue to support departments and leadership across campus with any needed messaging and additional media inquiries.

- **Scientific Advisor and Student Volunteers**

- Total of 29 student volunteers tested 19 buildings over a 10-week period ending December 2022.
- Currently drafting a manuscript to encapsulate water testing operations under the direction of Dr. Rebecca Fry and Cathy Brennan.

- **Operational Excellence**

- Brought the Operational Excellence mindset, problem solving framework and solution approach to the project by serving as a strategic thought partner with project leadership.
- Served as liaison to the Chancellor and Chancellor's Chief of Staff.

- **Emergency Management and Planning**

- Facilitated coordination and policy group meetings and coordinated data collection and documentation process.
- Published 13 situation reports and a final debrief summary report.

- **Campus Health**

- Provided 109 no-cost blood lead level tests to students and postdoctoral fellows.
- Served as health advisor and source of information on risks of water lead exposure for students and parents.

# Student Volunteers

Students played a key role in testing for lead while gaining real-world scientific experience.



# Water Testing Summary

CATHY BRENNAN  
ENVIRONMENT, HEALTH AND SAFETY

# Water Testing Overview



- Developed proactive and aggressive sampling plan based on EPA 3Ts: Training, Testing and Taking Action
- Strategy broken into multiple phases based on risk:
  - Phase One: Drinking water fixtures that potentially contain lead components based on age and construction
  - Phase Two: Drinking water fixtures in buildings built in or prior to 1930
  - Phase Three: Drinking water fixtures in buildings built 1931 to 1990
  - Phase Four: Drinking water fixtures in buildings built after 1990
- Testing effort lasted seven months and included:
  - 260 buildings
  - 3876 fixtures
- All results posted publicly on EHS website:  
[ehs.unc.edu/topics/campus-drinking-water](https://ehs.unc.edu/topics/campus-drinking-water)

# Remediation Efforts



- Remediating all fixtures found with  $\geq 1$  ppb lead (EPA action level for public water authorities is 15 ppb)
- Fixtures remediated - 101/420 (24%)
  - Housing - remediated 30 fixtures (100%)
  - Campus Buildings (Non-residential) – remediated 71 fixtures
- Completely remediated 12 non-residential campus buildings



# Future Drinking Water Quality Program



- Routine sampling for lead in fixtures used for drinking or food preparation.
  - Will include fixtures in buildings constructed pre-2014.
  - Test fixtures at least once every three years.
  - Test fixtures with detected lead no later than one year after remediation.
- Investigate other contaminants we should periodically be testing for.
  - Total dissolved solids, copper, etc.
- Work with Facilities Services on filter tracking and maintenance.
  - RTI filter monitoring pilot at Gillings School of Global Public Health.
- EHS will continue existing processes and procedures.
  - Test all new construction plumbing prior to occupancy.
  - Test fixtures if we receive water quality complaints.



# Key Takeaways

## Successes and Opportunities:

- **EHS early involvement of University Communications** was beneficial in the preparation of effective public communication.
- **Information sharing and communication** was consistent and positive at all levels of the project, from operations personnel to senior leadership support.
- **Public messaging** was created collaboratively and efficiently.
- **Engage subject matter experts and scientific advisors** earlier in the process.
- **Increase familiarity with Veoci** incident management software for the end-user as well as more consistent use of the platform.

## Ongoing Activity:

- **Website transition** for campus drinking water post spring semester.
- **Remediation and repair** efforts continue.

## Special Acknowledgements

**We would like to acknowledge the tremendous efforts of our campus partners. This process was a comprehensive, campuswide effort that relied on the collaboration and expertise of our University community. We thank all those involved for their hard work and dedication.**

- Environment, Health and Safety
- Carolina Housing
- Facilities Services
- Finance and Budget
- Information Technology Services
- University Communications
- Gillings School of Global Public Health (Dr. Rebecca Fry and Student Volunteers)
- Operational Excellence
- Emergency Management and Planning
- Campus Health

