Committee Minutes

COMPLIANCE, AUDIT, AND RISK COMMITTEE

November 7, 2021

The Compliance, Audit, and Risk Committee of the Board of Visitors of Virginia Polytechnic Institute and State University met in Closed Session on Sunday, November 7, 2021, at 9:00 a.m. on the Blacksburg campus at The Inn at Virginia Tech in the Latham A/B Ballroom.

Committee Members Present
Sharon Brickhouse Martin (Chair)
Greta Harris
Anna James
Jeff Veatch

Board Members Present
Letitia Long (Rector)
Shelly Butler Barlow
Charles C. T. Hill
Melissa Nelson
Chris Petersen
Horacio Valeiras
Preston White

The following Virginia Tech staff members were present: Cyril Clarke, Corey Earles, Kay Heidbreder, Sharon Kurek, Justin Noble, Kim O’Rourke, Dwayne Pinkney, Timothy Sands

Also present was the following guest: Ashley Deihr (Baker Tilly)

Closed Session

Chair Martin convened the meeting and welcomed everyone to the Compliance, Audit, and Risk Committee meeting.

* * * * * * * * * *

Motion to Begin Closed Session

Ms. James moved that the Compliance, Audit, and Risk Committee of the Board of Visitors of Virginia Polytechnic Institute and State University convene in a closed meeting, pursuant to §2.2-3711, Code of Virginia, as amended, for the purposes of discussing:

1. Audits or reviews that include evaluation of performance of departments or schools of public institutions of higher education where such evaluation will involve discussion of the performance of specific individuals;
2. Audits or reviews that include threats to cybersecurity;

The motion was seconded by Ms. Harris and passed unanimously.

The meeting concluded at 10:07 a.m.

************************************************

The Compliance, Audit, and Risk Committee of the Board of Visitors of Virginia Polytechnic Institute and State University reconvened in Open Session on Sunday, November 7, 2021, at 10:07 a.m. on the Blacksburg campus at The Inn at Virginia Tech in the Latham A/B Ballroom.

Committee Members Present
Sharon Brickhouse Martin (Chair)
Greta Harris
Anna James
Jeff Veatch

Board Members Present
Letitia Long (Rector)
Melissa Nelson

Constituent Representatives Present
Serena Young (Staff Representative)
Phil Miskovic (Graduate Student Representative)

The following Virginia Tech staff members were present: Eric Brooks, Charlene Casamento, Cyril Clarke, Al Cooper, Jon Deskins, Corey Earles, Kari Evans, Guru Ghosh, Kay Heidbreder, Rachel Holloway, Sharon Kurek, Connie Marshall, Andrew McWhinney, Scott Midkiff, Kenneth Miller, Justin Noble, Kim O’Rourke, Mark Owczarski, Ellen Plummer, Chris Rhames, Dwayne Pinkney, Timothy Sands, Don Taylor, Melinda West

Also present were the following guests: Kevin Savoy (APA), Jonathan South (APA)

Open Session

1. **Motion to Reconvene in Open Session**: Following the Closed Session, the doors were opened and Chair Martin called on Mr. Veatch to make the motion to return to Open Session. Mr. Veatch made the following motion to return to open session:

   WHEREAS, the Compliance, Audit, and Risk Committee of the Board of Visitors of Virginia Polytechnic Institute and State University has convened a closed meeting on
this date pursuant to an affirmative recorded vote and in accordance with the provision of The Virginia Freedom of Information Act; and

WHEREAS, Section 2.2-3712 of the Code of Virginia requires a certification by the Compliance, Audit, and Risk Committee of the Board of Visitors that such closed meeting was conducted in conformity with Virginia law;

NOW, THEREFORE, BE IT RESOLVED that the Compliance, Audit, and Risk Committee of the Board of Visitors of Virginia Polytechnic Institute and State University hereby certifies that, to the best of each member’s knowledge, (i) only public business matters lawfully exempted from open meeting requirements by Virginia law were discussed in the closed meeting to which this certification resolution applies, and (ii) only such public business matters as were identified in the motion convening the closed meeting were heard, discussed or considered by the Compliance, Audit, and Risk Committee of the Board of Visitors.

The motion was seconded by Ms. Harris and passed unanimously.

2. **Welcome and Introductory Remarks:** Chair Martin convened the meeting and welcomed everyone to the Compliance, Audit, and Risk Committee meeting.

3. **Consent Agenda:** The Committee considered for approval and acceptance the items listed on the Consent Agenda.

   a. **Minutes for the June 7, 2021 and August 30, 2021 Meetings:** The Committee reviewed and approved the minutes of the June 7, 2021 and August 30, 2021 meetings.

   b. **Update of Responses to Open Internal Audit Comments:** The Committee reviewed the university’s update of responses to all previously issued internal audit reports. As of March 31, 2021, the university had five open recommendations. Thirteen audit comments were issued during the fourth quarter of the fiscal year. As of September 30, 2021, the university had addressed eight comments, leaving 10 open recommendations in progress.

   c. **Audit Plan Status Report:** The committee reviewed the Audit Plan Status Report. The Office of Audit, Risk, and Compliance (OARC) has completed 28 percent of its audit plan, and 50 percent is underway, in accordance with the fiscal year 2021-22 annual audit plan.
d. **Internal Audit Reports:** The following internal audit reports were issued by OARC since the June 7, 2021 meeting. Where applicable, management developed action plans to effectively address the issues in the report with a reasonable implementation timeframe. As noted above, OARC conducts follow-up on management’s implementation of agreed upon improvements for previously issued audit recommendations.

i. Athletics: The audit received a rating of improvements are recommended. Audit recommendations were issued to management where opportunities for further improvements were noted in the areas of transfer evaluation timeliness and interdepartmental communication and collaboration.

ii. Fralin Life Sciences Institute: The audit received a rating of improvements are recommended. Observations were noted on the need to improve governance of distributed funds and completion of chemical registrations. Additionally, a low-priority recommendation of a less significant nature was noted regarding physical security.

iii. IT: External Interfaces and Wire Transfers: The audit received an effective rating. A low priority recommendation related to server configuration was identified and reported to management.

iv. Principal Investigator Research Management: The audit received a rating of improvements are recommended. An audit recommendation was issued to management where opportunities for further improvements were noted regarding one principal investigator’s compliance with sponsor requirements. A low-priority recommendation of a less significant nature was noted regarding enhancing Office of Sponsored Programs training and tools.

v. Procurement and Accounts Payable: The audit received an effective rating.

vi. Research: Biosafety: The audit received a rating of improvements are recommended. A low-priority recommendation of a less significant nature was noted regarding the annual review process. Opportunities include broadening coverage of onsite reviews and ensuring annual reviews are monitored for completion.

vii. Student Fees: The audit received an effective rating. One observation with university-wide impact was noted regarding the processes used to account for expenses paid by course fees.

viii. Virginia Tech Carilion School of Medicine Policy Compliance Review: The audit received a rating of improvements are recommended. Audit
recommendations were issued to management where opportunities for further improvement were noted in the areas of wage payroll, leave reporting, P14 appointments, and information technology.

e. **Review and Approval of Audit Charters:** The Committee reviewed the Compliance, Audit, and Risk Committee Charter and the Charter for the Office of Audit, Risk, and Compliance in accordance with professional standards.

4. **Auditor of Public Accounts Financial Statement Audit and Management Letter:** The Committee received a report from Mr. Kevin Savoy, Audit Director for the Auditor of Public Accounts, on the results of the university’s financial statement audit and management letter for the fiscal year ended June 30, 2021, which resulted in an unmodified opinion. Furthermore, the audit identified no new material weaknesses or significant deficiencies during fiscal year 2021.

5. **Statewide Reviews and Special Reports:** The Committee received a report on additional reviews and special reports that have occurred at the university. Ms. Melinda West, the Associate Vice President and University Controller, discussed the APA’s 2019 Report on Compliance – NCAA Subsidy Percentage Requirements, the Internal Revenue Service audit on 403(b) deferred compensation plans, and the Financial Audit of Costs Catalyzing Afghan Agricultural Innovation Program conducted by USAID and the Special Inspector General for Afghanistan Reconstruction. Ms. Sharon Kurek, the Executive Director of the Office of Audit, Risk, and Compliance, discussed the Office of the State Inspector General’s Clery Act performance audit and the capital construction project reviews conducted as outsourced contract compliance audits.

6. **OARC Annual Report:** The Committee reviewed the Annual Report for OARC. Acceptance of this report documents the Committee’s review of the effectiveness of the internal audit function, including staffing resources, financial budget, training, objectivity, and reporting relationships as required by the Committee's Charter. In addition to conducting scheduled audits, policy compliance reviews, and advisory services, the department participated in annual audit activities, fraud investigations, and professional development activities. Fifteen audit projects, or 65 percent of the audits on the fiscal year 2020-21 amended audit plan, have been completed. Nine audit projects were underway at June 30th and carried forward into fiscal year 2021-22.

In addition to operating the audit function, OARC continued implementation of the Enterprise Risk Management (ERM) program and Institutional Compliance Program
ICP). OARC deployed an updated risk landscape with a comprehensive evaluation of the “top ten risks” and increased the visibility of ERM across the CAR Committee and other Board of Visitors committees. A university-wide compliance matrix, including the identification of distributed compliance owners and a mechanism to capture associated risk assessments, was developed as part of the ICP, as well as managing the anonymous hotline.

7. **Internal Audit Reports:** The following internal audit reports were issued by the Office of Audit, Risk, and Compliance (OARC) since the June 7, 2021 meeting. Where applicable, management developed action plans to effectively address the issues in the report with a reasonable implementation timeframe. As noted above, OARC conducts follow-up on management’s implementation of agreed upon improvements for previously issued audit recommendations.

a. Equine Medical Center: The audit received a rating of significant improvements are needed. Audit recommendations were issued to management where opportunities for further improvements were noted related to dispensary inventory, delinquent accounts, compliance with financial policies, and supplies inventory. A low-priority recommendation of a less significant nature was noted regarding invoice adjustments.

b. Veterinary Teaching Hospital: The audit received a rating of improvements are recommended. Audit recommendations were issued to management where opportunities for further improvements were noted related to supplies inventory management. A low-priority recommendation of a less significant nature was noted regarding controls over adjustments to supplies inventory.

8. **Academic Enterprise Risk Discussion:** The committee received an update on certain academic enterprise risks. Management led a discussion on the following enterprise risks: evolving pedagogy and delivery, faculty and staff recruitment and retention, and global engagement.

9. **Discussion of Future Topics:** The Committee discussed topics to be covered in future committee meetings.

The meeting concluded at 11:17 a.m.
The Compliance, Audit, and Risk (CAR) and Governance and Administration (G&A) Committees of the Board of Visitors of Virginia Polytechnic Institute and State University convened in Joint Closed Session on Sunday, November 7, 2021, at 11:23 a.m. on the Blacksburg campus at The Inn at Virginia Tech in the Latham A/B Ballroom.

**Committee Members Present**
Sharon Brickhouse Martin (CAR Chair)
Anna James
Chris Petersen (G&A Chair)
Horacio Valeiras
Jeff Veatch

**Committee Members Absent**
Greta Harris
Mehul Sanghani

**Board Members Present**
Letitia Long (Rector)
Edward Baine
Charles C. T. Hill
Melissa Nelson
Preston White

The following Virginia Tech staff members were present: Charlene Casamento, Cyril Clarke, Kay Heidbreder, Sharon Kurek, Justin Noble, Kim O’Rourke, Dwayne Pinkney, Timothy Sands

**Joint Closed Session**
Chair Martin convened the meeting and welcomed everyone to the Compliance, Audit, and Risk Committee meeting.

************

**Motion to Begin Joint Closed Session**
Ms. James moved that the Compliance, Audit, and Risk and the Governance and Administration Committees of the Board of Visitors of Virginia Polytechnic Institute and State University convene in a closed meeting, pursuant to §2.2-3711, *Code of Virginia*, as amended, for the purposes of discussing:

1. Audits or reviews that include evaluation of performance of departments or schools of public institutions of higher education where such evaluation will involve discussion of the performance of specific individuals;

2. Audits or reviews that include threats to cybersecurity;
The motion was seconded by Mr. Veatch and passed unanimously.

**********

Motion to End Joint Closed Session

Following the Closed Session, the doors were opened and Chair Martin called on Ms. James to make the motion to end the Joint Closed Session. Ms. James made the following motion to end the joint closed session:

WHEREAS, the Compliance, Audit, and Risk Committee and the Governance and Administration Committee of the Board of Visitors of Virginia Polytechnic Institute and State University have convened a closed meeting on this date pursuant to an affirmative recorded vote and in accordance with the provisions of the Virginia Freedom of Information Act; and

WHEREAS, §2.2-3711 of the Code of Virginia requires a certification by the Compliance, Audit, and Risk Committee and the Governance and Administration Committee that such closed meeting was conducted in conformity with Virginia Law;

NOW, THEREFORE, BE IT RESOLVED, that the Compliance, Audit, and Risk Committee and the Governance and Administration Committee of the Board of Visitors of Virginia Polytechnic Institute and State University hereby certifies that, to the best of each member's knowledge, (i) only public business matters lawfully exempted from open meeting requirements by Virginia law were discussed in the closed meeting to which this certification resolution applies, and (ii) only such public business matters as were identified in the motion convening the closed meeting were heard, discussed or considered by the committees.

The motion was seconded by Mr. Veatch and passed unanimously.

**********

There being no further business, the meeting adjourned at 12:05 p.m.

***********************

8
The Committee will consider for approval and acceptance the items listed on the Consent Agenda.

a. Minutes from the June and August Meetings
   i. Minutes from the June 7, 2021 Meeting
   ii. Minutes from the August 30, 2021 Meeting

b. Update of Responses to Open Internal Audit Comments

c. Audit Plan Status Report

d. Internal Audit Reports
   i. Athletics
   ii. Fralin Life Sciences Institute
   iii. IT: External Interfaces and Wire Transfers
   iv. Principal Investigator Research Management
   v. Procurement and Accounts Payable
   vi. Research: Biosafety
   vii. Student Fees
   viii. Virginia Tech Carilion School of Medicine Policy Compliance Review

e. Review and Approval of Charters
   i. Compliance, Audit, and Risk Committee Charter
   ii. Charter for the Office of Audit, Risk, and Compliance
Update of Responses to Open Audit Comments

COMPLIANCE, AUDIT, AND RISK COMMITTEE

September 30, 2021

As part of the internal audit process, university management participates in the opening and closing conferences and receives copies of all final audit reports. The audited units are responsible for implementing action plans by the agreed upon implementation dates, and management is responsible for ongoing oversight and monitoring of progress to ensure solutions are implemented without unnecessary delays. Management supports units as necessary when assistance is needed to complete an action plan. As units progress toward completion of an action plan, the Office of Audit, Risk, and Compliance (OARC) performs a follow-up visit within two weeks after the target implementation date. OARC is responsible for conducting independent follow up testing to verify mitigation of the risks identified in the recommendation and formally close the recommendation. As part of management’s oversight and monitoring responsibility, this report is provided to update the Compliance, Audit, and Risk Committee on the status of outstanding recommendations. Management reviews and assesses recommendations with university-wide implications and shares the recommendations with responsible administrative departments for process improvements, additions or clarification of university policy, and inclusion in training programs and campus communications. Management continues to emphasize the prompt completion of action plans.

The report includes outstanding recommendations from compliance reviews and audit reports. Consistent with the report presented at the June Board meeting, the report of open recommendations includes three attachments:

- Attachment A summarizes each audit in order of final report date with extended and on-schedule open recommendations.
- Attachment B details all open medium and high priority recommendations for each audit in order of the original target completion date, and with an explanation for those having revised target dates or revised priority levels.
- Attachment C charts performance in implementing recommendations on schedule over the last seven years. The 100 percent on-schedule rate for fiscal year 2022 reflects closing 1 of 1 recommendations by the original due date.

The report presented at the June 7, 2021 meeting covered audit reports reviewed and accepted through March 31, 2021 and included five open medium and high priority recommendations. Activity for the period April 1, 2021 to September 30, 2021 resulted in the following:

<table>
<thead>
<tr>
<th>Description</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open recommendations as of March 31, 2021</td>
<td>5</td>
</tr>
<tr>
<td>Add: medium and high priority recommendations accepted June 7, 2021</td>
<td>13</td>
</tr>
<tr>
<td>Subtract: recommendations addressed since March 31, 2021</td>
<td>8</td>
</tr>
<tr>
<td>Remaining open recommendations as of September 30, 2021</td>
<td>10</td>
</tr>
</tbody>
</table>

While this report is prepared as of the end of the quarter, management continues to receive updates from OARC regarding auditee progress on action plans. All open recommendations are progressing as expected and are on track to meet their respective target due dates. Management continues to work conjointly with all units and provides assistance as needed to ensure action plans are completed timely.
### Open Recommendations by Priority Level

**COMPLIANCE, AUDIT, AND RISK COMMITTEE**

**September 30, 2021**

<table>
<thead>
<tr>
<th>Report Date</th>
<th>Audit Name</th>
<th>Audit Number</th>
<th>Total Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Total</strong></td>
</tr>
<tr>
<td>29-Jul-19</td>
<td>College of Liberal Arts &amp; Human Sciences</td>
<td>18-1387</td>
<td>3 2 1 * 1 1</td>
</tr>
<tr>
<td>11-May-20</td>
<td>College of Science</td>
<td>20-1491</td>
<td>3 2 1 1 1 1</td>
</tr>
<tr>
<td>17-May-21</td>
<td>Linex Server Security</td>
<td>21-1530</td>
<td>4 3 1 1 1 1</td>
</tr>
<tr>
<td>21-May-21</td>
<td>Scholarships</td>
<td>21-1535</td>
<td>7 0 0 7 7 7</td>
</tr>
<tr>
<td><strong>Totals:</strong></td>
<td></td>
<td></td>
<td><strong>17 7 0 1 0 9 10</strong></td>
</tr>
</tbody>
</table>

* The College of Liberal Arts & Human Sciences missed their implementation date as actions were not implemented by the original due date. College management has conducted significant work to address a portion of the recommendation resulting in Office of Audit, Risk, & Compliance (OARC) lowering the item from high to medium priority. A new implementation date of December 15, 2021 has been issued.
## ATTACHMENT B

### Internal Audit Open Recommendations

**COMPLIANCE, AUDIT, AND RISK COMMITTEE**

**September 30, 2021**

<table>
<thead>
<tr>
<th>Report Date</th>
<th>Item</th>
<th>Audit Number</th>
<th>Audit Name</th>
<th>Recommendation Name</th>
<th>Priority</th>
<th>Target Date</th>
<th>Follow Up Status</th>
<th>Status of Recommendations with Revised Priority / Target Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>25-Aug-19</td>
<td>1</td>
<td>18-1387</td>
<td>College of Liberal Arts &amp; Human Sciences</td>
<td>Information Technology</td>
<td>High</td>
<td>31-Dec-20</td>
<td>Revised</td>
<td>Auditee missed original implementation date. Priority level has been reduced to Medium with a new target date of 12/15/21.</td>
</tr>
<tr>
<td>11-May-20</td>
<td>2</td>
<td>20-1491</td>
<td>College of Science</td>
<td>Information Technology</td>
<td>Medium</td>
<td>01-Dec-21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21-May-21</td>
<td>3</td>
<td>21-1535</td>
<td>Scholarships</td>
<td>Scholarship Utilization</td>
<td>Medium</td>
<td>01-Mar-22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21-May-21</td>
<td>4</td>
<td>21-1535</td>
<td>Scholarships (Appendix A: Athletics)</td>
<td>Scholarship Utilization</td>
<td>Medium</td>
<td>01-Mar-22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21-May-21</td>
<td>5</td>
<td>21-1535</td>
<td>Scholarships (Appendix B: College of Ag &amp; Life Sciences)</td>
<td>Scholarship Utilization</td>
<td>Medium</td>
<td>01-Mar-22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21-May-21</td>
<td>6</td>
<td>21-1535</td>
<td>Scholarships (Appendix H: College of Science)</td>
<td>Scholarship Utilization</td>
<td>Medium</td>
<td>01-Mar-22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21-May-21</td>
<td>7</td>
<td>21-1535</td>
<td>Scholarships (Appendix H: College of Science)</td>
<td>Submission of Scholarship Utilization Reports</td>
<td>Medium</td>
<td>01-Mar-22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21-May-21</td>
<td>8</td>
<td>21-1535</td>
<td>Scholarships (Appendix H: College of Science)</td>
<td>Awarding Procedures Documentation</td>
<td>Medium</td>
<td>01-Mar-22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21-May-21</td>
<td>9</td>
<td>21-1535</td>
<td>Scholarships (Appendix H: Vice President for Advancement)</td>
<td>Scholarship Utilization</td>
<td>Medium</td>
<td>01-Mar-22</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Follow Up Status**

1. Management confirmed during follow up discussions with the Office of Audit, Risk, and Compliance (OARC) that the auditee missed their original implementation date. College management has conducted significant work to address a portion of the recommendation resulting in OARC lowering the item from high to medium priority. Management has established a revised target date of December 15, 2021.

2. Management confirmed during follow up discussions with the Office of Audit, Risk, and Compliance (OARC) that actions are occurring and the target date will be met.

3. Target date is beyond current calendar quarter. Management has follow-up discussions with the auditor to monitor progress, to assist with actions that may be needed to meet target dates, and to assess the feasibility of the target date.

For Open Detail Report: “current calendar quarter” is used to refer to the current working quarter instead of the quarter being reported on.

**Presentation Date: November 7, 2021**
Management Performance and Trends Regarding Office of Audit, Risk, and Compliance Recommendations

COMPLIANCE, AUDIT, AND RISK COMMITTEE

September 30, 2021

Seven Year Trend of Recommendations Closed - On Schedule

- 95% in FY2021

* 95% consists of 19 out of 20 recommendations being closed on time during FY2021

Presentation Date: November 7, 2021
Audit Plan Status Report

COMPLIANCE, AUDIT, AND RISK COMMITTEE

November 7, 2021

Audit Plan Update

Audits were performed in accordance with the fiscal year 2021-22 annual audit plan at a level consistent with the resources of the Office of Audit, Risk, and Compliance (OARC). Fifteen planned projects have been completed since the June board meeting, specifically:

- 4 FY 2020-21 projects were completed by June 30, 2021
- 9 FY 2020-21 projects were carry-forward
- 2 current fiscal year projects

The types of projects completed included 11 risk-based audits, 2 policy compliance reviews, and 2 advisory projects. The two completed advisory projects were related to Gift Accounting and Robotic Process Automation.

The following nine projects are underway: Continuing and Professional Education, Data Analytics: Research Compliance, Fralin Biomedical Research Institute at VTC, HR: Compensation and Classification, Mechanical Engineering, Service Centers, Title IX Compliance, Senior Vice President and Chief Business Officer Policy Compliance Review, and Vice President for Finance Policy Compliance Review.

In fiscal year 2021-22, OARC has completed 27 percent of its audit plan as depicted in Exhibit 1.

Exhibit 1
FY 2021-22 Completion of Audit Plan

<table>
<thead>
<tr>
<th>Audits</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total # of Audits Planned</td>
<td>31</td>
</tr>
<tr>
<td>Total # of Supplemental Audits</td>
<td>0</td>
</tr>
<tr>
<td>Total # of Carry Forwards</td>
<td>9</td>
</tr>
<tr>
<td>Total # of Planned Audits Canceled and/or Deferred</td>
<td>0</td>
</tr>
<tr>
<td>Total Audits in Plan as Amended</td>
<td>40</td>
</tr>
<tr>
<td>Total Audits Completed</td>
<td>11</td>
</tr>
<tr>
<td>Audits - Percentage Complete</td>
<td>28%</td>
</tr>
<tr>
<td>Audits - Percentage Complete or Underway</td>
<td>50%</td>
</tr>
</tbody>
</table>

Note: Includes Policy Compliance Reviews and Advisory Services

---

1 These projects were unable to be reported to the Compliance, Audit, and Risk Committee in August since the committee did not meet in open session.
Background

This report provides a summary of audit ratings issued this period and the full rating system definitions. The following reviews have been completed during this reporting period. The Office of Audit, Risk, and Compliance has made a concerted effort to ensure progress on the annual audit plan.

<table>
<thead>
<tr>
<th>Consent Agenda Reports</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Athletics</td>
<td>Improvements are Recommended</td>
</tr>
<tr>
<td>Fralin Life Sciences Institute</td>
<td>Improvements are Recommended</td>
</tr>
<tr>
<td>IT: External Interfaces and Wire Transfers</td>
<td>Effective</td>
</tr>
<tr>
<td>Principal Investigator Research Management</td>
<td>Improvements are Recommended</td>
</tr>
<tr>
<td>Procurement and Accounts Payable</td>
<td>Effective</td>
</tr>
<tr>
<td>Research: Biosafety</td>
<td>Improvements are Recommended</td>
</tr>
<tr>
<td>Student Fees</td>
<td>Effective</td>
</tr>
<tr>
<td>Virginia Tech Carilion School of Medicine Policy Compliance Review</td>
<td>Improvements are Recommended</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Report for Discussion</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equine Medical Center</td>
<td>Significant Improvements are Needed</td>
</tr>
<tr>
<td>Veterinary Teaching Hospital</td>
<td>Improvements are Recommended</td>
</tr>
</tbody>
</table>
Summary of Audit Ratings

The Office of Audit, Risk, and Compliance’s rating system has four tiers from which to assess the controls designed by management to reduce exposures to risk in the area being audited. The auditor can use professional judgment in constructing the exact wording of the assessment in order to capture varying degrees of deficiency or significance.

Definitions of each assessment option

Effective – The audit identified opportunities for improvement in the internal control structure, but business risks are adequately controlled in most cases.

Improvements are Recommended – The audit identified occasional or isolated business risks that were not adequately or consistently controlled.

Significant or Immediate Improvements are Needed – The audit identified several control weaknesses that have caused, or are likely to cause, material errors, omissions, or irregularities to go undetected. The weaknesses are of such magnitude that senior management should undertake immediate corrective actions to mitigate the associated business risk and possible damages to the organization.

Unreliable – The audit identified numerous significant business risks for which management has not designed or consistently applied controls prior to the audit. Persistent and pervasive control weaknesses have caused or could cause significant errors, omissions, or irregularities to go undetected. The weaknesses are of such magnitude that senior management must undertake immediate corrective actions to bring the situation under control and avoid (additional) damages to the organization.

RECOMMENDATION:

That the internal audit reports listed above be accepted by the Compliance, Audit, and Risk Committee.

November 7, 2021
Virginia Tech

Audit No. 21-1522: Athletics

Audit Report
October 22, 2021
# Table of Contents

## Executive Summary
- Assessment ..................................................................................................................... 2
- Summary of Issues and Action Plans .............................................................................. 2
- Acknowledgement of Satisfactory Performance .............................................................. 2

## Engagement Overview
- Background ..................................................................................................................... 4
- Risk Exposure ................................................................................................................. 4
- Audit Objectives ............................................................................................................. 4
- Scope ................................................................................................................................ 5
- Criteria ............................................................................................................................. 5

## Issues and Recommendations
- I. Transfer Evaluation Process ..................................................................................... 6

## Personnel Involved with Audit
- Audit Team Information .............................................................................................. 8
- Management Contacts ................................................................................................. 8
- Contact Information ..................................................................................................... 8
- Distribution List .......................................................................................................... 9
Executive Summary

Assessment
Our audit indicated that the Department of Athletics (Athletics) has designed and implemented controls that are generally effective at ensuring their exposure to many of the business risks it faces related to compliance with National Collegiate Athletic Association (NCAA) regulations in the areas of NCAA transfer portal and athletic eligibility; however, improvements are recommended to fully achieve efficient processes and a related system of internal controls. Audit recommendations were issued to management where opportunities for further improvements were noted in the areas of transfer evaluation timeliness and interdepartmental communication and collaboration.

Summary of Issues and Action Plans
The following observations were noted during our review, and recommendations were issued to address the related business risks:

- The student-athlete transfer evaluation process, while effective, is lengthy and communication inefficiencies were noted between Athletics and the Office of the University Registrar (Registrar). Both speed and accuracy are important if Virginia Tech is to be competitive in the athletic transfer space. While Athletics is the primary point-of-contact with a potential transfer student-athlete, coordination and cooperation between Athletics, Registrar, Undergraduate Admissions, and Student-Athlete Academic Support Services (SAASS) must be both effective and efficient to ensure a comprehensive review and initial decision are both accurate and made as timely as possible. The longer these processes take, the higher the risk that the student-athlete receives an offer from a different institution.

Athletics will engage with the Registrar to identify a designated Athletics point-of-contact to serve as a liaison for transfer credit evaluations and the credit awarding process. Upon initial request for a transfer evaluation, Athletics will provide the Registrar with all course syllabi for courses not listed in the university’s Undergraduate Transfer Equivalency Database (database). Additionally, Athletics will collaborate with the designated Athletics point-of-contact to create and implement the use of a workflow and shared electronic documentation system.

Athletics and Registrar management have developed management action plans that effectively address the issues in the report, and the proposed timeline of implementing all action plans by April 1, 2022 is reasonable.

Acknowledgement of Satisfactory Performance
Athletics has policies and procedures in place to effectively administer and monitor incoming and outgoing transfer student-athletes in accordance with NCAA legislation. Athletics, Registrar, Undergraduate Admissions, and SAASS appear to have adequate and reliable processes for evaluating incoming transfer student-athlete eligibility and
admissibility. Athletics’ written policy and rules education procedures related to the impacts of a student-athlete providing written notification of transfer appeared appropriate and in accordance with NCAA bylaws.
Engagement Overview

Background
Virginia Tech has competed in varsity sports for more than 100 years and now sponsors 22 athletic teams at the NCAA Division I level, including 10 men’s sports, 10 women's sports, and 2 co-ed sports. Athletics monitors more than 550 student-athletes each academic year. Compliance with NCAA, Atlantic Coast Conference (ACC), and university regulations is a shared responsibility among coaches, administrators, staff, and student-athletes. The Athletics Compliance Office strives to provide the necessary guidance, education, and monitoring on the numerous NCAA bylaws in place to maintain institutional control.

On April 14, 2021, the NCAA adopted legislation that grants any first-time transfer student-athlete immediate eligibility when transferring to a 4-year institution. New legislation applies to all transfers beginning in academic year 2021-22. The legislative change has ushered in a new era and influx of transfers. To capitalize on this, institutions need to be able to quickly evaluate potential transfers for their admissibility to the university and to conduct a transfer evaluation to ensure the potential transfer can remain eligible under NCAA bylaws.

Transfer evaluation is a collaborative effort across many different departments including Athletics, Registrar, Undergraduate Admissions, and SAASS. While Athletics is the natural initiator and point-of-contact with the student-athlete, simultaneously the Registrar must conduct a transcript evaluation, Admissions must ensure admissibility, and SAASS must review potential degree plans and current progress towards degree. Each of these pieces must be completed and returned to Athletics as part of the evaluation of the student-athlete’s place on a roster and effects on overall scholarship or squad limits. The longer these processes take, the higher the risk that the student-athlete receives an offer from a different institution. Therefore, both speed and accuracy are important if Virginia Tech is to be competitive in the athletic transfer space.

Risk Exposure
The Office of Audit, Risk, and Compliance periodically performs a detailed risk assessment of the university’s auditable entities using factors such as the amount of cash inflows, operating expenditures, research activities, management of sensitive information, and level of external regulation. The goal of the risk assessment is to prioritize those entities within the university that should receive audit attention. Athletics was determined to be a high-risk entity due to the complex nature of NCAA regulations, the amount of annual revenue generated, and the diverse types of expenditures that occur frequently within the department. Select components of Athletics are reviewed annually.

Audit Objectives
In planning the engagement, the audit staff met with Athletics’ management to identify potential risks, processes to mitigate those risks, and potential audit objectives. The Auditor-in-Charge performed a risk assessment of the information obtained to evaluate
the adequacy and effectiveness of the processes in place, identify areas of high risk, and establish audit objectives. Audit objectives were identified as follows:

- To determine the effectiveness of the transfer evaluation process.
- To determine whether the university has written policies related to the impacts of a student-athlete providing written notification of transfer in accordance with NCAA bylaws.
- To determine if rules education adequately covers transfer bylaws.

Scope
To accomplish our objectives, we obtained an understanding of departmental procedures by interviewing key personnel, observing operating processes, evaluating the adequacy of existing policies and procedures, assessing the adequacy of internal controls, evaluating compliance with established policies and procedures, and performing other audit procedures as considered necessary. The audit covered student-athletes transferring to the university for the 2021-22 academic year and student-athletes leaving the university after the 2020-21 academic year.

Criteria
This independent and objective review was conducted in conformance with the International Standards for the Professional Practice of Internal Auditing promulgated by the Institute of Internal Auditors. The standards require planning and performance of the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for observations and conclusions based on the audit objectives.

Management is responsible for establishing and maintaining effective risk management, internal control, and governance. The review was performed using a risk-based audit approach that did not include evaluation of every process, transaction, or activity occurring during the scope period. As a result, complete assurance cannot be provided that all processes are effectively controlled and that all errors, irregularities, and instances of noncompliance occurring during the scope period were identified.
Issues and Recommendations

The following recommendations are based on our observations and conclusions regarding risk management, internal control, and governance relative to Athletics. The views of management and their associated responses to audit recommendations are presented as management action plans.

I. Transfer Evaluation Process

The transfer evaluation process is effective in preventing errors; however, the process is lengthy and communication inefficiencies were noted between Athletics and the Registrar. Most delays in the process were due to lags in requesting and receiving transfer student-athlete transcripts and syllabi for courses where no course equivalency was listed in the database.

Additionally, communication inefficiencies were noted. Specifically, the Registrar had not designated an individual responsible for student-athlete transcript evaluation. Currently, the individual who performs the initial transcript evaluation is not always the same person who completes the official transcript evaluation. This leads to the potential duplication of effort and increases the likelihood of discrepancies in the process. Furthermore, transfer credit certification requests from Athletics to the Registrar are requested and processed through ongoing e-mail threads. This results in numerous e-mails which can be difficult to track and monitor.

While inefficiencies in the transfer evaluation process were identified, no errors were noted during our review of the evaluation process. However, the engagement recognized the evolution of the student-athlete transfer environment and the need for the transfer process to evolve accordingly. An efficient and timely transfer evaluation process would assist Athletics in its recruiting efforts in the highly-competitive transfer space.

Recommendation:
Transfer evaluation process improvements should include:
- Athletics requesting all syllabi for any transfer course where no course equivalency is listed in the database prior to requesting a transfer evaluation from the Registrar.
- Athletics and the Registrar investigating the use of a shared electronic workflow/spreadsheet to complete transfer evaluations.
- The Registrar assigning a designated Credit Evaluator to be the primary point-of-contact for complete transfer student-athlete evaluations.

Management Action Plan:
Athletics management will:
- Upon request for transfer evaluation of committed prospects, provide course syllabi to accompany requests for courses not listed in the equivalency database.
• Collaborate with the designated Registrar point-of-contact to create and implement the use of a workflow and shared electronic documentation system.
• Actively engage with the Registrar to assist with identification of a designated point-of-contact to serve as the liaison for transfer credit evaluation and credit awarding for all Athletics transfer requests.

Alison S. Whittaker, Associate Director, Compliance and Admissions, is responsible for implementing this action plan by April 1, 2022.
Personnel Involved with Audit

Audit Team Information

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thomas J. Demmer</td>
<td>Auditor-in-Charge</td>
</tr>
<tr>
<td>J. Andrew McWhinney</td>
<td>Staff Auditor II</td>
</tr>
<tr>
<td>Mauro A. Castro Silva</td>
<td>Staff Auditor II</td>
</tr>
</tbody>
</table>

Management Contacts

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sarah E. Armstrong</td>
<td>Director of Student-Athlete Academic Support Services</td>
</tr>
<tr>
<td>Bridget Brugger McSorley</td>
<td>Senior Associate Athletic Director for Strategic Affairs</td>
</tr>
<tr>
<td>Clyde Y. Cridlin</td>
<td>Associate Registrar for Academic Programs and Compliance</td>
</tr>
<tr>
<td>Megan B. Griesemer</td>
<td>Assistant Director, Compliance</td>
</tr>
<tr>
<td>Derek A. Gwinn</td>
<td>Senior Associate Athletic Director, Compliance</td>
</tr>
<tr>
<td>Chris L. Helms</td>
<td>Senior Associate Athletic Director, Administration and Sports Programs</td>
</tr>
<tr>
<td>Rebecca S. Jones</td>
<td>Athletic Eligibility/Graduation Analyst, Registrar</td>
</tr>
<tr>
<td>Vicki J. Langford</td>
<td>Assistant Registrar for Records, Registration and Transfer Credit</td>
</tr>
<tr>
<td>Kim L. McKinnie</td>
<td>International Credit Evaluator, Registrar</td>
</tr>
<tr>
<td>Alison S. Whittaker</td>
<td>Associate Director, Compliance and Admissions</td>
</tr>
</tbody>
</table>

Contact Information
For questions regarding this review, contact Justin T. Noble, Director of Internal Audit.

Office of Audit, Risk, and Compliance (0328)
North End Center, Suite 3200
300 Turner Street NW
Blacksburg, Virginia 24061

Email: jtnoble@vt.edu
Phone: (540) 231-5883
Website: www.oarc.vt.edu
Distribution List
Whit Babcock
Cyril R. Clarke
Luisa Havens Gerardo
Derek A. Gwinn
Sharon M. Kurek
Bridget Brugger McSorley
Dwayne L. Pinkney
Timothy D. Sands
Richard A. Sparks Jr.
G. Don Taylor Jr.
Alison S. Whittaker
Virginia Tech

Audit No. 21-1526: Fralin Life Sciences Institute

Audit Report
September 27, 2021
# Table of Contents

## Executive Summary
- Assessment .............................................................................................................. 2
- Summary of Issues and Action Plans ................................................................. 2
- Acknowledgement of Satisfactory Performance ............................................... 2

## Engagement Overview
- Background .................................................................................................................. 3
- Risk Exposure .............................................................................................................. 3
- Audit Objectives .......................................................................................................... 3
- Scope ............................................................................................................................. 3
- Criteria ......................................................................................................................... 4

## Issues and Recommendations
- I. Oversight of Distributed Funds ........................................................................ 5
- II. Chemical Registrations ....................................................................................... 7

## Personnel Involved with Audit
- Audit Team Information ......................................................................................... 8
- Management Contacts ............................................................................................... 8
- Contact Information .................................................................................................. 8
- Distribution List ......................................................................................................... 8
Executive Summary

Assessment
Our audit indicated that management has designed and implemented controls that are often effective at reducing Fralin Life Science Institutes’ (FLSI) exposure to many of the business risks it faces, but improvements are recommended to achieve a fully effective system of internal controls. Observations were noted on the need to improve governance of distributed funds and completion of chemical registrations. Additionally, a low-priority recommendation of a less significant nature was noted regarding physical security.

Summary of Issues and Action Plans
The following observations were noted during our review, and recommendations were issued to address the related business risks:

- **FLSI's efforts to implement a framework for awarding, monitoring, and measuring the results of distributed funds were underway, but procedures were not yet fully implemented.**
  
  *FLSI will continue to develop its investment strategy that is consistent with university and Office of the Vice President for Research and Innovation (OVPRI) goals and aligns with the institute's strategic priorities.*

- **Annual chemical registrations in Fralin Hall have not been completed.**
  
  *Examination of Safety Management System records noted that 10 of 12 (83%) labs reviewed had not updated their annual registration as required by Environmental Health and Safety (EHS) guidelines.*
  
  *FLSI will send notification emails in April and October each year to principal investigators with wet labs and/or maintain chemical inventories in FLSI buildings to highlight EHS guidelines that include annual chemical registration requirements.*

FLSI has developed management action plans that effectively address the issues in the report, and the proposed timeline of implementing all action plans by August 31, 2021 is reasonable.

Acknowledgement of Satisfactory Performance
For the sponsored research transactions reviewed, labor cost adjustments and effort reports were documented, approved timely, and reasonable, and expenditures were made in compliance with university and other guidelines. Observation of laboratory facilities, equipment, and documentation indicated they were generally appropriate to the research being performed.
Engagement Overview

Background
The Fralin Life Sciences Institute at Virginia Tech is an investment institute committed to enhancing the quality, quantity, and competitiveness of innovative environmental and life sciences research, education, and outreach across the university. FLSI’s operations span five buildings, provides access to a set of core resources, and provides research group support.

FLSI was formed in August 2008 as an administrative merger of the Fralin Biotechnology Center and the Institute for Biomedical and Public Health Sciences. In April 2019, the university transferred the resources of the Biocomplexity Institute into FLSI on the Blacksburg campus. In doing so, the university plans to support life sciences research by providing “room to grow” through shared laboratories and catalyzing collaboration and partnership.

Risk Exposure
The Office of Audit, Risk, and Compliance periodically performs a detailed risk assessment of the university’s auditable entities using factors such as the amount of cash inflows, operating expenditures, research activities, management of sensitive information, and level of external regulation. The goal of the risk assessment is to prioritize those entities within the university that should receive audit attention. FLSI was determined to be a high-risk entity due to the recent transfer of the assets of the Biocomplexity Institute and because of the services it provides to a wide range of researchers.

Audit Objectives
In planning the engagement, the audit staff met with FLSI management to identify business goals and objectives, potential risks, processes to mitigate those risks, and potential audit objectives. The Auditor-in-Charge performed a risk assessment of the information obtained to evaluate the adequacy and effectiveness of the processes in place, identify areas of high risk, and establish audit objectives. Audit objectives were identified as follows:

- Determine whether governance controls were in place to ensure that funds provided by FLSI were used for the intended purpose and generate benefits.
- Determine whether charges for labor and non-labor expenses were allowable, appropriate, and documented and whether the level of effort was certified timely and by the correct personnel.
- Determine whether procedures were in place to ensure both the physical security and health and safety of FLSI-owned lab spaces.

Scope
To accomplish our objectives, we obtained an understanding of departmental procedures by interviewing FLSI directors, managers, and other personnel; observing operating processes and laboratory facilities; evaluating the adequacy of existing policies and
procedures; assessing the adequacy of internal controls; evaluating compliance with established policies and procedures; and performing other audit procedures as considered necessary. The audit covered the period of January 1, 2020 to December 31, 2020, with some controls assessed as they were implemented during fieldwork in early 2021.

Criteria
This independent and objective review was conducted in conformance with the International Standards for the Professional Practice of Internal Auditing promulgated by the Institute of Internal Auditors. The standards require planning and performance of the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for observations and conclusions based on the audit objectives.

Management is responsible for establishing and maintaining effective risk management, internal control, and governance. The review was performed using a risk-based audit approach that did not include evaluation of every process, transaction, or activity occurring during the scope period. As a result, complete assurance cannot be provided that all processes are effectively controlled and that all errors, irregularities, and instances of noncompliance occurring during the scope period were identified.
Issues and Recommendations

The following recommendations are based on our observations and conclusions regarding risk management, internal control, and governance relative to FLSI. The views of management and their associated responses to audit recommendations are presented as management action plans.

I. Oversight of Distributed Funds

FLSI had not fully implemented a framework for awarding, monitoring, and measuring results for distributed funds. As of March 2021, approximately $2 million had been distributed in fiscal year 2020-2021. Additionally, FLSI did not have processes in place for communicating funding decisions and reporting expectations to recipients in writing or for monitoring the use of funds throughout the award period. FLSI did have an annual reporting requirement in which recipients detailed the use of funds and the outcomes resulting from the distributed funds. FLSI management stated the tracking and managing of funds was a responsibility of the college and departments receiving funding.

FLSI, in its current state, is the result of the combination of the prior FLSI institute and the Biocomplexity Institute. An audit of the prior FLSI\(^1\) found similar issues. Following the previous audit, FLSI implemented a process for communicating funding decisions and associated expectations to fund recipients via award letters and worked with the OVPRI to implement quarterly reports to better allow FLSI to monitor the use of distributed funds. However, management indicated the award letters and reporting process developed with OVPRI were no longer in place. FLSI indicated these processes fell out of use due to personnel transitions and because the reports did not provide useful information. In addition, many awards were made to the same groups across multiple years and, therefore, the reporting and other expectations of the award did not change year after year.

FLSI organizational changes have also contributed to controls not being fully implemented. The combination of FLSI and the former Biocomplexity Institute resulted in the need to combine the financial and physical assets. New FLSI leadership was appointed in April 2020 and has developed a new vision and strategic priorities. Additionally, new OVPRI leadership is engaged in developing its overall approach for measuring the return on investment for the university’s institutes, including FLSI.

FLSI management provided preliminary documents indicating that it is engaged with OVPRI in initial efforts in developing an overall framework for managing its distributed funds. Elements of FLSI’s approach that are under development include:

\(^1\) 15-1197: Fralin Life Science Institute - March 4, 2015
- An overall investment strategy that identifies areas of focus for investing funds.
- Performance metrics that measure success and outcomes.
- Request for proposal documents and investment evaluation criteria.
- Memorandum of understanding templates that define goals and reporting expectations.

Implementing an overall strategy for managing funds, establishing accountability for investment outcomes, and monitoring return on investment helps management make decisions about where to invest funds and to ensure that distributed funds return the expected benefits.

**Recommendation:**
FLSI management should continue to develop and fully implement processes for managing distributed funds, including:
- Establishing a strategy that targets the types of investments that best support FLSI’s mission and goals.
- Creating tools for communicating expectations and goals related to use of distributed funds and for monitoring adherence to those expectations.
- Implementing metrics that measure if results are achieved.

FLSI should work with OVPRI management to implement these processes to ensure consistency with the university's overall return on investment strategy.

**Management Action Plan:**
FLSI will continue to develop its investment strategy that is consistent with university and OVPRI goals and aligns with the institute's strategic priorities. Expectations regarding managing funds and reporting outcomes will be developed and communicated to funding recipients via email or other written formats using templates based on the type of award. Specified requirements will include due dates, final reports, and deliverables, as appropriate. Actual results will be compared to the documented requirements to assess the funding recipient’s success in meeting expectations. FLSI will actively work with programs that fall short [or are on track to fall short] of expectations to implement strategies for improvements. Initial communications will occur by November 1, 2021. Development of Fiscal Year 2023 outcomes/metrics assessment will be completed by August 31, 2022.

Kirk Felton, Director of Operations is responsible for implementing this action plan by August 31, 2022.
II. Chemical Registrations

Researchers using Fralin Hall laboratory spaces did not complete their annual chemical registrations. Annual chemical registrations in Fralin Hall have not been completed. Examination of Safety Management System records noted that 10 of 12 (83%) labs reviewed had not updated their annual registration as required by EHS guidelines. FLSI management indicated the oversight was the result of principal investigators lacking awareness of the renewal requirement as it is not widely and clearly published. Registering chemicals that are used or stored in laboratory spaces supports university efforts to ensure the safe use of chemicals and safe conduct of research.

Recommendation:
FLSI management should ensure principal investigators are aware of chemical registration requirements and update the registrations annually.

Management Action Plan:
FLSI will remind principal investigators of their responsibilities regarding chemical registrations and inform them of an updated process that includes automated reminders from the EHS Safety Management System.

Kirk Felton, Director of Operations, is responsible for implementing this action plan by October 15, 2021.
Personnel Involved with Audit

## Audit Team Information

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michael A. Dean</td>
<td>Auditor-in-Charge</td>
</tr>
<tr>
<td>J. Andrew McWhinney</td>
<td>Staff Auditor</td>
</tr>
</tbody>
</table>

## Management Contacts

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zachary R. Adams</td>
<td>Assistant Director, Environmental Health and Safety</td>
</tr>
<tr>
<td>Divyabala P. Amin</td>
<td>Director, Financial Compliance and Integrity, Office of Sponsored Programs</td>
</tr>
<tr>
<td>Paul Bibb</td>
<td>Facilities Specialist</td>
</tr>
<tr>
<td>Kirk Felton</td>
<td>Director, Operations</td>
</tr>
<tr>
<td>Amy D. Morrow</td>
<td>Facilities Specialist</td>
</tr>
<tr>
<td>Janet B. Webster</td>
<td>Director, Administration</td>
</tr>
<tr>
<td>Barbara C. Wise</td>
<td>Assistant Director, Research Operations</td>
</tr>
</tbody>
</table>

## Contact Information

For questions regarding this review, contact Justin T. Noble, Director of Internal Audit.

Office of Audit, Risk, and Compliance (0328)  
Email: jtnoble@vt.edu  
North End Center, Suite 3200  
Phone: (540) 231-5883  
300 Turner Street NW  
Website: www.oarc.vt.edu  
Blacksburg, Virginia 24061

## Distribution List

Cyril R. Clarke | Kenneth E. Miller  
Kirk Felton     | Dwayne L. Pinkney  
Lance Franklin  | Trudy M. Riley    
Matthew W. Hulver| Timothy D. Sands  
Christopher H. Kiwus | Daniel Sui   
Sharon M. Kurek | Melinda J. West   

Attachment D
# Table of Contents

## Executive Summary
- Assessment ........................................................................................................... 3
- Summarized Scorecard ............................................................................................... 3
- Scorecard .................................................................................................................... 3
- Detailed Scorecard ...................................................................................................... 4
- Acknowledgement of Satisfactory Performance .......................................................... 5

## Engagement Overview
- Background ................................................................................................................ 6
- Risk Exposure ............................................................................................................. 6
- Audit Objectives ......................................................................................................... 6
- Scope ........................................................................................................................... 7
- Units and Interfaces Selected for Detailed Testing ...................................................... 7
- Criteria ....................................................................................................................... 8

## Personnel Involved with Audit
- Audit Team Information ............................................................................................ 9
- Contact Information .................................................................................................. 9
- Distribution List ........................................................................................................ 9

## Appendix A: Enterprise Systems
- Scorecard .................................................................................................................. 10
- Issues and Recommendations .................................................................................. 10
- I. Authorized and Secure ......................................................................................... 11
- Management Contacts .............................................................................................. 11
- Distribution List ....................................................................................................... 11

## Appendix B: Controller’s Office
- Scorecard .................................................................................................................. 12
- Management Contacts .............................................................................................. 13
- Distribution List ....................................................................................................... 13

## Appendix C: Division of Human Resources
- Scorecard .................................................................................................................. 14
Management Contacts ................................................................................................................. 14
Distribution List .......................................................................................................................... 14

Appendix D: Network Infrastructure and Services
Scorecard ........................................................................................................................................ 15
Management Contacts .................................................................................................................. 16
Distribution List .......................................................................................................................... 16

Appendix E: Office of Export and Secure Research Compliance
Scorecard ........................................................................................................................................ 17
Management Contacts .................................................................................................................. 18
Distribution List .......................................................................................................................... 18

Appendix F: Office of University Advancement
Scorecard ........................................................................................................................................ 19
Management Contacts .................................................................................................................. 20
Distribution List .......................................................................................................................... 20

Appendix G: Office of the University Bursar
Scorecard ........................................................................................................................................ 21
Management Contacts .................................................................................................................. 22
Distribution List .......................................................................................................................... 22

Appendix H: Technology-Enhanced Learning and Online Strategies
Scorecard ........................................................................................................................................ 23
Management Contacts .................................................................................................................. 24
Distribution List .......................................................................................................................... 24
Executive Summary

Assessment
Our audit indicated that management has designed and implemented controls that are effective at reducing the exposure of external interfaces and wire transfers for many of the business risks the units face. A low priority recommendation related to server configuration was identified and reported in Appendix A.

Summarized Scorecard
The following table provides an individual assessment of configuration and controls for each audit objective. For each assessment that received below an effective rating, a detailed presentation of the issues noted along with any recommendations can be found in the report appendices.

<table>
<thead>
<tr>
<th>Audit Objective</th>
<th>Expected Condition (Effective Rating)</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorized and Secure</td>
<td>• Transfers receive required approvals before transmission.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Access to technology resources used to perform transfers is restricted to users with a business need.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Servers involved in transfers are configured according to university standards.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Sensitive data is encrypted in transit.</td>
<td></td>
</tr>
<tr>
<td>Completeness and Integrity</td>
<td>• Confirmations, control totals, or hashes are used to ensure completeness and integrity of transfers.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Manual or automated review processes identify and correct potential errors or exceptions.</td>
<td></td>
</tr>
</tbody>
</table>
### Detailed Scorecard

The following table provides an assessment of internal controls for each unit involved in managing the selected interfaces. For each unit that received below an effective rating, details of the issues noted, along with any recommendations, can be found in the report appendices.

<table>
<thead>
<tr>
<th>Unit</th>
<th>Authorized and Secure</th>
<th>Completions and Integrity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Approvals</td>
<td>Access Restricted</td>
</tr>
<tr>
<td>Enterprise Systems</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Controller’s Office</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Division of Human Resources</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Network Infrastructure and Services</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Office of Export and Secure Research Compliance</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Office of University Advancement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Office of the University Bursar</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technology-enhanced Learning and Online Strategies (TLOS)</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

**Percent Effective**

<table>
<thead>
<tr>
<th>Authorized and Secure</th>
<th>Completeness and Integrity</th>
</tr>
</thead>
<tbody>
<tr>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>80%</td>
<td>100%</td>
</tr>
<tr>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

### Scorecard Legend

- **Effective**: Green
- **Medium Priority**: Yellow
- **Low Priority**: Orange
- **High Priority**: Red

* Issues related to configuration of TLOS Canvas servers were identified in the IT: Linux Server Security audit and included in that audit report. Refer to that report for details.

^ Issues related to configuration of Advancement’s Blackbaud servers were addressed to Enterprise Systems, the server administrator.
Acknowledgement of Satisfactory Performance

Units responsible for the reviewed external interfaces and wire transfers had controls in place to ensure that transfers were approved, access to system resources needed to perform transfers was restricted to personnel with a business need, and sensitive data was encrypted in transit. Transfer and data integrity controls included hash totals, transmission confirmations, and error reporting processes that provide assurance data is transferred completely and accurately.
Engagement Overview

Background
The university sends a large number of highly sensitive electronic transmissions to external entities including fund transfers and protected sensitive information. In some cases, the expanding use of cloud hosted systems means the university is transferring data from systems hosted in the cloud to systems on university premises. These transfers may involve financial information, personal information regarding students or employees, or research data. The university maintains interfaces with the entities sending or receiving transmissions to enable the transfers. These interfaces support the university’s operations and responsibilities related to financial management, human resources, education, research, public service, and compliance. The interfaces connect university systems to each other and to systems managed by vendors and partners in the private sector and government.

The sensitivity of the information transmitted via interfaces makes ensuring the security of the information an important consideration. Data exposures could result in negative impacts to the university’s reputation, finances, and compliance responsibilities, and could expose students and employees to risk of identity theft.

Risk Exposure
The Office of Audit, Risk, and Compliance periodically performs a detailed information technology (IT) risk assessment of the university’s auditable IT functions using factors such as business impact, technical complexity, security requirements, management of sensitive information, and level of external regulation. The goal of the risk assessment is to prioritize those IT functions within the university that should receive audit attention, ensure the consideration and reduction of enterprise-wide risks within the IT universe at Virginia Tech, and ensure compliance with Commonwealth of Virginia requirements for IT audit functions.

Auditable IT functions are mapped to ISO 27002, an information security standard published by the International Organization for Standardization (ISO) that is considered to be a best practice for developing and maintaining enterprise-wide IT security. IT policies at Virginia Tech already reference this internationally accepted standard as the basis for the guidance set forth. External interfaces and wire transfers was determined to be a high-risk IT function due to the sensitivity of data being potentially transferred, and the effect of a data loss, exposure, or loss of integrity on university operations and reputation.

Audit Objectives
In planning the engagement, audit staff researched university standards and best practices to determine risks, vulnerabilities, and recent developments related to external interfaces and wire transfers. The audit staff performed a risk assessment of the information obtained to evaluate the adequacy and effectiveness of the processes in
place, identify areas of high risk, and establish audit objectives. Audit objectives were identified as follows:

- Determine whether controls reasonably ensure only authorized transfers occur and that they occur securely.
- Determine whether controls over data transmission ensure completeness and integrity of transfers.

Scope
To accomplish our objectives, we examined system and security configurations, access lists, scripts and script outputs involved in the interfaces and wire transfers, interviewed end users and system and applications administrators. The following units and interfaces were included in testing:

<table>
<thead>
<tr>
<th>Units and Interfaces Selected for Detailed Testing</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Unit</strong></td>
</tr>
<tr>
<td>Enterprise Systems</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Controller’s Office</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Division of Human Resources</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Network Infrastructure and Services</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Office of Export and Secure Research Compliance</td>
</tr>
<tr>
<td>Office of University Advancement</td>
</tr>
</tbody>
</table>
### Units and Interfaces Selected for Detailed Testing

<table>
<thead>
<tr>
<th>Unit</th>
<th>Systems Involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office of the University Bursar</td>
<td>• Wire Transfers</td>
</tr>
<tr>
<td>Technology-enhanced Learning and Online Strategies</td>
<td>• Canvas</td>
</tr>
</tbody>
</table>

**Criteria**

This independent and objective review was conducted in conformance with the *International Standards for the Professional Practice of Internal Auditing* promulgated by the Institute of Internal Auditors. The standards require planning and performance of the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for observations and conclusions based on the audit objectives.

Management is responsible for establishing and maintaining effective risk management, internal control, and governance. The review was performed using a risk-based audit approach that did not include evaluation of every process, transaction, or activity occurring during the scope period. As a result, complete assurance cannot be provided that all processes are effectively controlled and that all errors, irregularities, and instances of noncompliance occurring during the scope period were identified.
Personnel Involved with Audit

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michael A. Dean</td>
<td>Auditor-in-Charge</td>
</tr>
<tr>
<td>William R. Griffin</td>
<td>Staff IT Auditor</td>
</tr>
</tbody>
</table>

Contact Information
For questions regarding this review, contact Justin T. Noble, Director of Internal Audit.

Office of Audit, Risk, and Compliance (0328)
North End Center, Suite 3200
300 Turner Street NW
Blacksburg, Virginia 24061

Phone: (540) 231-5883
Website: www.oarc.vt.edu

Distribution List
Sharon M. Kurek
Randolph C. Marchany
Kenneth T. McCrery
Scott F. Midkiff
Kenneth E. Miller
Dwayne L. Pinkney
Timothy D. Sands
Richard A. Sparks Jr.
Melinda J. West
# Appendix A: Enterprise Systems

## Scorecard

The following table provides an assessment of internal controls for each audit objective.

<table>
<thead>
<tr>
<th>Scorecard</th>
<th>Audit Objective</th>
<th>Expected Condition (Effective Rating)</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorized and Secure</td>
<td>Transfers receive required approvals before transmission.</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Access to technology resources used to perform transfers is restricted to users with a business need.</td>
<td>⬤</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Servers involved in transfers are configured according to university standards.</td>
<td>⬤</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sensitive data is encrypted in transit.</td>
<td>⬤</td>
<td></td>
</tr>
<tr>
<td>Completeness and Integrity</td>
<td>Confirmations, control totals, or hashes are used to ensure completeness and integrity of transfers.</td>
<td>⬤</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Manual or automated review processes identify and correct potential errors or exceptions.</td>
<td>⬤</td>
<td></td>
</tr>
</tbody>
</table>

### Scorecard Legend

- 🟢 Effective
- 🟠 Low Priority
- 🟡 Medium Priority
- 🟥 High Priority

## Issues and Recommendations

The following recommendation is based on our observation and conclusion regarding risk management, internal control, and governance relative to management of external interfaces and wire transfers by Enterprise Systems. The views of management and their associated responses to audit recommendations are presented as management action plans.

### Recommendation Priority Legend:

- 🟥 High Priority
- 🟡 Medium Priority
- 🟠 Low Priority
I. Authorized and Secure

Examination of system configurations for the server used to manage the transfer process for donor ACH information from Blackbaud to Bank of America determined that two-factor authentication had not been implemented on the server as required by the Minimum Security Standards. Discussion with the Enterprise Systems personnel who administered the server indicated not implementing two-factor authentication was an unintentional oversight, and they promptly implemented a temporary solution that addressed the risk until a permanent solution was completed. Two-factor authentication adds a second method to authenticate users, which helps protect against the risk of misuse of a compromised account. Because the data transferred via this interface is bank routing information for donors, an unintentional exposure or theft of data could have significant impacts on the affected individuals and the university’s reputation.

Recommendation:
Enterprise Systems should complete implementation of a permanent two-factor authentication solution as soon as practical.

Management Action Plan:
Enterprise Systems implemented two-factor authentication for the Blackbaud server as of May 14, 2021.

Richard J. Quintin, Director of Database Application and Administration, has fully implemented this action plan as of May 14, 2021.

<table>
<thead>
<tr>
<th>Management Contacts</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name</strong></td>
</tr>
<tr>
<td>Kevin A. Buhrdorf</td>
</tr>
<tr>
<td>A. Shane Carpenter</td>
</tr>
<tr>
<td>Michael E. Flora</td>
</tr>
<tr>
<td>Richard J. Quintin</td>
</tr>
<tr>
<td>Jay Smith III</td>
</tr>
</tbody>
</table>

Distribution List
Rhonda K. Arsenault
Deborah M. Fulton
Scott F. Midkiff
Charles D. Phlegar
Richard J. Quintin
### Scorecard
The following table provides an assessment of internal controls for each audit objective.

<table>
<thead>
<tr>
<th>Scorecard</th>
<th>Audit Objective</th>
<th>Expected Condition (Effective Rating)</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Authorized and Secure</td>
<td>• Transfers receive required approvals before transmission.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Access to technology resources used to perform transfers is restricted to users with a business need.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Servers involved in transfers are configured according to university standards.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Sensitive data is encrypted in transit.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Completeness and Integrity</td>
<td>• Confirmations, control totals, or hashes are used to ensure completeness and integrity of transfers.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Manual or automated review processes identify and correct potential errors or exceptions.</td>
<td></td>
</tr>
</tbody>
</table>

### Scorecard Legend
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Green" /></td>
<td>Effective</td>
</tr>
<tr>
<td><img src="image" alt="Yellow" /></td>
<td>Low Priority</td>
</tr>
<tr>
<td><img src="image" alt="Orange" /></td>
<td>Medium Priority</td>
</tr>
<tr>
<td><img src="image" alt="Red" /></td>
<td>High Priority</td>
</tr>
</tbody>
</table>
Management Contacts

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kayla S. Akers</td>
<td>Business Operations Specialist</td>
</tr>
<tr>
<td>Alexis Connelly</td>
<td>Payroll Director</td>
</tr>
<tr>
<td>Erin L. Evans</td>
<td>Payroll Operations Manager</td>
</tr>
<tr>
<td>Stacy A. King</td>
<td>Associate Controller for Accounting Operations</td>
</tr>
<tr>
<td>Derek B. Scheidt</td>
<td>Manager of General Accounting</td>
</tr>
<tr>
<td>Brandon M. Webb</td>
<td>Accounts Payable Manager</td>
</tr>
</tbody>
</table>

Distribution List
Kenneth E. Miller
Melinda J. West
Appendix C: Division of Human Resources

Scorecard
The following table provides an assessment of internal controls for each audit objective.

<table>
<thead>
<tr>
<th>Scorecard</th>
<th>Audit Objective</th>
<th>Expected Condition (Effective Rating)</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Authorized and Secure</td>
<td>• Transfers receive required approvals before transmission.</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Access to technology resources used to perform transfers is restricted to users with a business need.</td>
<td>🟢</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Servers involved in transfers are configured according to university standards.</td>
<td>🟢</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Sensitive data is encrypted in transit.</td>
<td>🟢</td>
</tr>
<tr>
<td></td>
<td>Completeness and Integrity</td>
<td>• Confirmations, control totals, or hashes are used to ensure completeness and integrity of transfers.</td>
<td>🟢</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Manual or automated review processes identify and correct potential errors or exceptions.</td>
<td>🟢</td>
</tr>
</tbody>
</table>

Scorecard Legend

- 🟢 Effective
- 🟢 Low Priority
- 🟢 Medium Priority
- 🟢 High Priority

Management Contacts

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steven Yi</td>
<td>Associate Director, Human Resources Applications</td>
</tr>
</tbody>
</table>

Distribution List

Marie T. Bliss
Bryan E. Garey
## Appendix D: Network Infrastructure and Services

### Scorecard

The following table provides an assessment of internal controls for each audit objective.

<table>
<thead>
<tr>
<th>Audit Objective</th>
<th>Expected Condition (Effective Rating)</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorized and Secure</td>
<td>• Transfers receive required approvals before transmission.</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>• Access to technology resources used to perform transfers is restricted to users with a business need.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Servers involved in transfers are configured according to university standards.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Sensitive data is encrypted in transit.</td>
<td>N/A</td>
</tr>
<tr>
<td>Completeness and Integrity</td>
<td>• Confirmations, control totals, or hashes are used to ensure completeness and integrity of transfers.</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>• Manual or automated review processes identify and correct potential errors or exceptions.</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### Scorecard Legend

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>🟢</td>
<td>Effective</td>
</tr>
<tr>
<td>🟠</td>
<td>Low Priority</td>
</tr>
<tr>
<td>🟡</td>
<td>Medium Priority</td>
</tr>
<tr>
<td>🟥</td>
<td>High Priority</td>
</tr>
</tbody>
</table>
Management Contacts

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joshua D. Aylor</td>
<td>Systems Development Manager</td>
</tr>
<tr>
<td>Matthew D. Strickler</td>
<td>Systems Operation Manager</td>
</tr>
</tbody>
</table>

Distribution List
William C. Dougherty II
B. Joe Hutson
Scott F. Midkiff
# Scorecard

The following table provides an assessment of internal controls for each audit objective.

## Scorecard

<table>
<thead>
<tr>
<th>Audit Objective</th>
<th>Expected Condition (Effective Rating)</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Authorized and Secure</strong></td>
<td>• Transfers receive required approvals before transmission.</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>• Access to technology resources used to perform transfers is restricted to users with a business need.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Servers involved in transfers are configured according to university standards.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Sensitive data is encrypted in transit.</td>
<td></td>
</tr>
<tr>
<td><strong>Completeness and Integrity</strong></td>
<td>• Confirmations, control totals, or hashes are used to ensure completeness and integrity of transfers.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Manual or automated review processes identify and correct potential errors or exceptions.</td>
<td></td>
</tr>
</tbody>
</table>

## Scorecard Legend

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Green</td>
<td>Effective</td>
</tr>
<tr>
<td></td>
<td>Yellow</td>
<td>Low Priority</td>
</tr>
<tr>
<td></td>
<td>Orange</td>
<td>Medium Priority</td>
</tr>
<tr>
<td></td>
<td>Red</td>
<td>High Priority</td>
</tr>
</tbody>
</table>
## Management Contacts

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thomas J. Beckett</td>
<td>IT Compliance Officer</td>
</tr>
<tr>
<td>Michael F. McGrath</td>
<td>Research Security Systems Administrator</td>
</tr>
<tr>
<td>John J. Talerico III</td>
<td>Director</td>
</tr>
</tbody>
</table>

## Distribution List

- Cyril R. Clarke
- Michael J. Friedlander
- Daniel Sui
- John J. Talerico III
Scorecard

The following table provides an assessment of internal controls for each audit objective.

<table>
<thead>
<tr>
<th>Audit Objective</th>
<th>Expected Condition (Effective Rating)</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorized and Secure</td>
<td>• Transfers receive required approvals before transmission.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Access to technology resources used to perform transfers is restricted to users with a business need.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Servers involved in transfers are configured according to university standards.</td>
<td>-- ^</td>
</tr>
<tr>
<td></td>
<td>• Sensitive data is encrypted in transit.</td>
<td></td>
</tr>
<tr>
<td>Completeness and Integrity</td>
<td>• Confirmations, control totals, or hashes are used to ensure completeness and integrity of transfers.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Manual or automated review processes identify and correct potential errors or exceptions.</td>
<td></td>
</tr>
</tbody>
</table>

^ Issues related to configuration of Advancement’s Blackbaud servers were addressed to Enterprise Systems, the server administrator, in Appendix A.

Scorecard Legend

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective</td>
<td></td>
</tr>
<tr>
<td>Low Priority</td>
<td></td>
</tr>
<tr>
<td>Medium Priority</td>
<td></td>
</tr>
<tr>
<td>High Priority</td>
<td></td>
</tr>
</tbody>
</table>
Management Contacts

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Karina L. Martin</td>
<td>Senior Director of Gift Accounting and Information Systems</td>
</tr>
<tr>
<td>Melissa G. Means</td>
<td>Assistant Director of Gift Accounting</td>
</tr>
</tbody>
</table>

Distribution List
Rhonda K. Arsenault
Charles D. Phlegar
# Appendix G: Office of the University Bursar

## Scorecard

The following table provides an assessment of internal controls for each audit objective.

<table>
<thead>
<tr>
<th>Audit Objective</th>
<th>Expected Condition (Effective Rating)</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorized and Secure</td>
<td>• Transfers receive required approvals before transmission.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Access to technology resources used to perform transfers is restricted to users with a business need.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Servers involved in transfers are configured according to university standards.</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>• Sensitive data is encrypted in transit.</td>
<td>N/A</td>
</tr>
<tr>
<td>Completeness and Integrity</td>
<td>• Confirmations, control totals, or hashes are used to ensure completeness and integrity of transfers.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Manual or automated review processes identify and correct potential errors or exceptions.</td>
<td></td>
</tr>
</tbody>
</table>

## Scorecard Legend

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="icon-effective.png" alt="Effective" /></td>
<td>Effective</td>
</tr>
<tr>
<td><img src="icon-lowpriority.png" alt="Low Priority" /></td>
<td>Low Priority</td>
</tr>
<tr>
<td><img src="icon-mediumpriority.png" alt="Medium Priority" /></td>
<td>Medium Priority</td>
</tr>
<tr>
<td><img src="icon-highpriority.png" alt="High Priority" /></td>
<td>High Priority</td>
</tr>
</tbody>
</table>
Management Contacts

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lauren Lawson</td>
<td>Manager of Bursar Operations and Systems</td>
</tr>
<tr>
<td>Rosa L. Lucas</td>
<td>Cash Receipts/Disbursements Manager</td>
</tr>
</tbody>
</table>

Distribution List

Lauren Lawson
Kenneth E. Miller
Melinda J. West
Appendix H: Technology-Enhanced Learning and Online Strategies

Scorecard
The following table provides an assessment of internal controls for each audit objective.

<table>
<thead>
<tr>
<th>Audit Objective</th>
<th>Expected Condition (Effective Rating)</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorized and Secure</td>
<td>• Transfers receive required approvals before transmission.</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>• Access to technology resources used to perform transfers is restricted to users with a business need.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Servers involved in transfers are configured according to university standards.</td>
<td>⬤</td>
</tr>
<tr>
<td></td>
<td>• Sensitive data is encrypted in transit.</td>
<td>⬤</td>
</tr>
<tr>
<td>Completeness and Integrity</td>
<td>• Confirmations, control totals, or hashes are used to ensure completeness and integrity of transfers.</td>
<td>⬤</td>
</tr>
<tr>
<td></td>
<td>• Manual or automated review processes identify and correct potential errors or exceptions.</td>
<td>⬤</td>
</tr>
</tbody>
</table>

* Server configurations for Canvas servers were tested as a part of the IT: Linux Server Security audit. Relevant results are included in that report.

<table>
<thead>
<tr>
<th>Scorecard Legend</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>🌟</td>
<td>Effective</td>
</tr>
<tr>
<td>🌟</td>
<td>Low Priority</td>
</tr>
<tr>
<td>🌟</td>
<td>Medium Priority</td>
</tr>
<tr>
<td>🔴</td>
<td>High Priority</td>
</tr>
<tr>
<td>Name</td>
<td>Title</td>
</tr>
<tr>
<td>-----------------------</td>
<td>-------------------------------------------------</td>
</tr>
<tr>
<td>Brian T. Broniak</td>
<td>Senior Director, Learning Systems</td>
</tr>
<tr>
<td>Santhosh R. Chalamalla</td>
<td>Applications Administrator and DevOps Programmer</td>
</tr>
<tr>
<td>Jonathan A. Kensler</td>
<td>Application Developer</td>
</tr>
<tr>
<td>Jihane Najdi</td>
<td>Senior Web Development Software Engineer</td>
</tr>
</tbody>
</table>

**Distribution List**
Scott F. Midkiff
Dale D. Pike
Virginia Tech

Audit No. 21-1532: Principal Investigator Research Management

Audit Report
October 22, 2021
# Table of Contents

## Executive Summary
- Assessment .................................................................................................................. 2  
- Summary of Issues and Action Plans ........................................................................... 2  
- Acknowledgement of Satisfactory Performance ............................................................. 2  
- Scorecard .......................................................................................................................... 3  

## Engagement Overview
- Background ..................................................................................................................... 4  
- Risk Exposure .................................................................................................................. 4  
- Audit Objectives .............................................................................................................. 4  
- Scope .................................................................................................................................. 6  
- Criteria ............................................................................................................................... 6  

## Issues and Recommendations
- I. Financial Oversight of Research ................................................................................ 7  

## Personnel Involved with Audit
- Audit Team Information .................................................................................................. 9  
- Management Contacts ................................................................................................... 9  
- Contact Information ........................................................................................................ 9  
- Distribution List .............................................................................................................. 9  
Executive Summary

Assessment
Our review of research management processes for certain principal investigators (PIs) indicated that management has designed controls that are often effective at reducing exposure to many of the risks faced, but improvements are recommended. An audit recommendation was issued to management where opportunities for further improvements were noted regarding one PI’s compliance with sponsor requirements. A low-priority recommendation of a less significant nature was noted regarding enhancing Office of Sponsored Programs (OSP) training and tools.

Summary of Issues and Action Plans
The following observations were noted during our review, and recommendations were issued to address the related business risks:

- Expenses charged to a sponsored project within the College of Agriculture and Life Sciences (CALS) were not always in compliance with the sponsor’s financial requirements. Additionally, the PI did not always receive adequate fiscal support to ensure good oversight of their sponsored research.
  
  OSP and CALS management have begun the process to evaluate the project expenditures and are working collaboratively to address issues as they are identified. Additionally, CALS management is determining how best to provide fiscal oversight for these sponsored programs moving forward.

OSP and CALS management have developed management action plans that effectively address the issues in the report, and the proposed timeline of implementing all action plans by June 1, 2022 is reasonable.

Acknowledgement of Satisfactory Performance
Overall, PIs were well informed of compliance areas related to their research and were engaged in management of their sponsored projects. Generally, PIs were well supported administratively to achieve their research goals.
Scorecard
The following table provides an overall assessment of management’s assertions of internal controls based on our discussions with the PIs.

<table>
<thead>
<tr>
<th>Conflict of Interest/Foreign Influence</th>
<th>Fiscal Responsibility</th>
<th>Project Closeout</th>
<th>IT Security</th>
<th>Lab Safety</th>
<th>Research Participant Safety</th>
<th>Secure Research Compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>College of Agriculture and Life Sciences (CALS) ¹</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>College of Natural Resources (CNRE)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>College of Engineering (COE) ²</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>College of Science (COS)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Fralin Biomedical Research Institute at VTC (FBRI)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Outreach and International Affairs (OIA)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Virginia Tech Transportation Institute (VTTI)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Percent Effective</td>
<td>100%</td>
<td>86%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Overall</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

¹ – Two PIs were selected from CALS.
² – Three PIs were selected from COE.
Engagement Overview

Background
With approximately $542 million dollars in research expenditures and ranked as the 48th research institution nationally for total research and development expenditures, the university’s research programs continue to make groundbreaking strides. Sponsored research compliance is a shared responsibility at Virginia Tech. PIs have the ultimate responsibility for maintaining compliance with both sponsor and university guidelines but are broadly supported by departmental personnel who provide day-to-day administrative activities. Support is also provided by centralized departments such as the Office of Sponsored Programs (OSP), the Institutional Review Board, the Institutional Animal Care and Use Committee, the Office of Export and Secure Research Compliance, Environmental Health and Safety, among others. This audit focused on the following key compliance areas:

- Conflict of Interest and Foreign Influence
- Fiscal Responsibility
- Project Closeout
- Information Technology Security
- Lab Safety
- Research Participant Safety
- Secure Research Compliance

Using sponsored program expenditure data, the auditors selected a sample of high performing researchers across multiple disciplines and different types of sponsored projects. A total of 10 PIs were selected. The PIs interviewed represented four different colleges, two institutes, and one area of outreach. PIs interviewed had approximately 235 years of combined experience at Virginia Tech and represented integral aspects of the university’s research portfolio.

Risk Exposure
The Office of Audit, Risk, and Compliance periodically performs a detailed risk assessment of the university’s auditable entities using factors such as the amount of cash inflows, operating expenditures, research activities, management of sensitive information, and level of external regulation. The goal of the risk assessment is to prioritize those entities within the university that should receive audit attention. Research management was determined to be a high-risk area as the university has over $542 million in research expenditures, and this area has a multitude of compliance requirements.

Audit Objectives
In planning the engagement, the audit staff perform a risk assessment to identify key areas of research compliance risk. Audit objectives were identified as follows:

- Determine how informed and engaged PIs are in maintaining compliance within the key research compliance areas.

---

1 2019 National Science Foundation Higher Education Research & Development (HERD) Survey
Assess the level of support and tools provided to PIs to manage their portfolios.
Understand PI perspectives regarding areas the university could increase or improve support for researchers.

The expected conditions to receive an effective rating in each of the compliance areas is included in the following table:

<table>
<thead>
<tr>
<th>Audit Objective</th>
<th>Expected Condition (Effective Rating)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conflict of Interest/Foreign Influence</td>
<td>The PI and key personnel under their supervision disclose and appropriately manage potential conflicts of interest.</td>
</tr>
<tr>
<td>Fiscal Responsibility</td>
<td>The PI is actively involved in the financial management of the projects and ensures that transactions are allowable, allocable, and reasonable.</td>
</tr>
<tr>
<td>Project Closeout</td>
<td>The PI manages project reporting in conjunction with OSP.</td>
</tr>
<tr>
<td>IT Security</td>
<td>The PI protects the integrity and security of physical and digital information technology resources.</td>
</tr>
<tr>
<td>Lab Safety</td>
<td>The PI promotes a culture and practice of safety in performing research by ensuring specific lab trainings are performed, inspection findings are addressed, and restricted materials are properly managed.</td>
</tr>
<tr>
<td>Research Participant Safety</td>
<td>The PI ensures the ethical treatment and dutiful protection of human and animal subjects participating in research.</td>
</tr>
<tr>
<td>Secure Research Compliance</td>
<td>The PI manages and remains informed of protocols for foreign travel and the safeguarding of research data requirements of the university and the sponsor.</td>
</tr>
</tbody>
</table>
Scope
The scope of the review was determined using project expenditure data and selecting a sample of 10 high-performing researchers across multiple disciplines and types of research and sponsors.

<table>
<thead>
<tr>
<th>Institutes</th>
<th># of PIs interviewed</th>
<th>Approx. # of years at VT</th>
<th>Expenditures on Active Awards¹ (million)</th>
<th>Number of Active Awards¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>CALS</td>
<td>2</td>
<td>33</td>
<td>$8.3</td>
<td>20</td>
</tr>
<tr>
<td>OIA</td>
<td>1</td>
<td>15</td>
<td>25.3</td>
<td>6</td>
</tr>
<tr>
<td>CNRE</td>
<td>1</td>
<td>22</td>
<td>16.1</td>
<td>16</td>
</tr>
<tr>
<td>COE</td>
<td>3</td>
<td>105</td>
<td>2.8</td>
<td>37</td>
</tr>
<tr>
<td>COS</td>
<td>1</td>
<td>20</td>
<td>20.1</td>
<td>15</td>
</tr>
<tr>
<td>TOTAL</td>
<td>10</td>
<td>234</td>
<td>$96.6</td>
<td>131</td>
</tr>
</tbody>
</table>

¹ – as of October 5, 2021

Upon completion of the initial data analysis, interviews with each PI were performed. To accomplish our objectives, we obtained an understanding of each PI’s procedures and processes across the seven compliance areas noted above. Information obtained during the interviews were assessed to determine the adequacy of the compliance environment. Further evaluation and audit procedures were conducted when information obtained indicated potential compliance concerns. The audit generally covered the compliance environment in fiscal year 2020-21.

Criteria
This independent and objective review was conducted in conformance with the International Standards for the Professional Practice of Internal Auditing promulgated by the Institute of Internal Auditors. The standards require planning and performance of the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for observations and conclusions based on the audit objectives.

Management is responsible for establishing and maintaining effective risk management, internal control, and governance. The review was performed using a risk-based audit approach that did not include evaluation of every process, transaction, or activity occurring during the scope period. As a result, complete assurance cannot be provided that all processes are effectively controlled and that all errors, irregularities, and instances of noncompliance occurring during the scope period were identified.
Issues and Recommendations

The following recommendation is based on our observations and conclusions regarding risk management, internal control, and governance relative to research management processes for certain PIs. The views of management and its associated response to the audit recommendation are presented as a management action plan.

I. Financial Oversight of Research

Expenses charged to certain sponsored projects by a single PI within CALS were not always in compliance with the financial requirements. The CALS PI has multiple sponsored projects that are closely aligned with each other, which adds complexity to the fiscal management. Compounding the issue, the PI, CALS management, and OSP all recognized that a vacancy in the program’s key fiscal position resulted in poor financial support.

As a result, expenses allocated to the sponsored projects may not comply with sponsor requirements. During interviews with the PI and OSP, concerns emerged that expenditures associated with the two closely aligned projects may not have always been properly allocated correctly or allowable based on the proposal and awarding documents. Specifically,

- Recruitment expenses that were to be covered by institutional funds were paid by the sponsored projects.
- Travel expenses for the PI, Co-PIs, and other contributors were restricted to the number allowed on the proposals but were over budget, at 159 percent.
- Guest speaker expenses, which were noted in the proposal to be institutional expenses, were paid by the sponsored projects.
- The participant lists appeared incomplete or inaccurate.
- Non-participant travel exceeded one trip per year.

A cursory review of the expenditure report noted additional expenditure account codes were charged that did not immediately appear to be allowable or allocable without an in-depth review.

PIs are responsible for the overall administrative and fiscal conduct on a sponsored program. Additionally, university policy 3255, Cost Transfers on Sponsored Projects, notes that OSP has a shared responsibility and is the final authority to review expenditures and to remove transactions posted that do not meet sponsor costing requirements.

The PI was very knowledgeable about the sponsor’s requirements and noted that the former Program Coordinator managed the day-to-day monitoring and processing of
transactions. However, the Program Coordinator left at the start of the Spring 2020 hiring freeze, which delayed identifying a replacement. Additionally, when discussing fiscal management and expenditure allocation with the PI, they stated their belief that the federal sponsor granted them re-budgeting authority to change individual categories up to 25%, outside of labor, so long as the total amount was not exceeded. However, this re-budgeting authority is likely not as broad-based as the PI understands it to be.

Overall, both the PI and CALS management noted that the PI has lacked adequate support from their department. CALS management indicated the PI had recently been provided additional departmental support and the college has stepped in to provide further support to ensure sponsored projects are appropriately managed. OSP has also indicated they are prepared to assist the PI and college in ensuring the projects are reviewed and handled appropriately.

The PI, college management, and OSP each expressed their desire to support both the PI and these critical sponsored projects. Ensuring the PI has the appropriate administrative support helps ensure that projects are performed in accordance with university policies and sponsor guidelines. And ultimately, ensuring the proper administration of sponsored programs ensures the institution is meeting both its sponsor obligations and its overarching strategic mission.

**Recommendation:**
The PI, CALS management, and OSP should work together to conduct a detailed review of expenditures charged to the sponsored projects. Any necessary correcting entries to reverse any unallowable, unallocable, or unreasonable expenditures charged to the projects should be completed. It should be determined whether a notification to the sponsor is needed. Additionally, CALS management should continue to work with the PI and their department to ensure necessary support is provided.

**Management Action Plan:**
OSP and CALS management have begun the process to evaluate the project expenditures. OSP is reviewing the individual project expenditures to ensure compliance with sponsor requirements. If expenditures are identified that need attention, the PI, CALS management, and OSP will work collaboratively to determine how best to address the issues identified. CALS management is determining how to best provide fiscal oversight for these sponsored projects moving forward. The PI, CALS management, and OSP have agreed to work together, respecting the individual oversight roles each area plays, to manage these important efforts.

Trudy M. Riley, Associate Vice President for Research and Innovation, Sponsored Programs, and Stephen J. Kleiber, Assistant Dean of Finance and Administration, CALS, are responsible for implementing this action plan by June 1, 2022.
Personnel Involved with Audit

### Audit Team Information

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dawnette L. Taylor</td>
<td>Auditor-in-Charge</td>
</tr>
<tr>
<td>J. Andrew McWhinney</td>
<td>Staff Auditor II</td>
</tr>
</tbody>
</table>

### Management Contacts

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Divyabala P. Amin</td>
<td>Director Financial Compliance and Integrity, Office of Sponsored Programs</td>
</tr>
<tr>
<td>Jennifer Kaminski</td>
<td>Senior Post Award Associate, Office of Sponsored Programs</td>
</tr>
<tr>
<td>Stephen J. Kleiber</td>
<td>Assistant Dean of Finance and Administration, CALS</td>
</tr>
<tr>
<td>Kamala Upadhyaya</td>
<td>Senior Director of Sponsored Programs, Office of Sponsored Programs</td>
</tr>
</tbody>
</table>

### Contact Information

For questions regarding this review, contact Justin T. Noble, Director of Internal Audit.

Office of Audit, Risk, and Compliance (0328)  
North End Center, Suite 3200  
300 Turner Street NW  
Blacksburg, Virginia 24061

Email: jtnoble@vt.edu  
Phone: (540) 231-5883  
Website: www.oarc.vt.edu

### Distribution List

<table>
<thead>
<tr>
<th>Name</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Divyabala P. Amin</td>
<td>Kenneth E. Miller</td>
</tr>
<tr>
<td>Cyril R. Clarke</td>
<td>Dwayne L. Pinkney</td>
</tr>
<tr>
<td>Zachary R. Doerzaph</td>
<td>Trudy M. Riley</td>
</tr>
<tr>
<td>Lance Franklin</td>
<td>Julia M. Ross</td>
</tr>
<tr>
<td>Ronald D. Fricker</td>
<td>Timothy D. Sands</td>
</tr>
<tr>
<td>Michael J. Friedlander</td>
<td>Edward J. Smith</td>
</tr>
<tr>
<td>Guruprasad Ghosh</td>
<td>Daniel Sui</td>
</tr>
<tr>
<td>Alan L. Grant</td>
<td>John J. Talerico III</td>
</tr>
<tr>
<td>Stephen J. Kleiber</td>
<td>Kamala Upadhyaya</td>
</tr>
<tr>
<td>Sharon M. Kurek</td>
<td>Melinda J. West</td>
</tr>
<tr>
<td>Lisa M. Lee</td>
<td>Paul M. Winistorfer</td>
</tr>
<tr>
<td>Scott F. Midkiff</td>
<td></td>
</tr>
</tbody>
</table>
Virginia Tech

Audit No. 21-1533: Procurement and Accounts Payable

Audit Report
October 13, 2021
# Table of Contents

**Executive Summary**
Assessment .................................................................................................................. 2
Acknowledgement of Satisfactory Performance.............................................................. 2

**Engagement Overview**
Background .................................................................................................................... 3
Risk Exposure .................................................................................................................. 3
Audit Objectives ............................................................................................................. 3
Scope ............................................................................................................................... 4
Criteria ........................................................................................................................... 4

**Personnel Involved with Audit**
Audit Team Information ............................................................................................... 5
Management Contacts .................................................................................................. 5
Contact Information ....................................................................................................... 5
Distribution List ............................................................................................................. 5
Executive Summary

Assessment
Our audit indicated that management has designed and implemented controls that are effective at reducing Procurement and Accounts Payable's exposure to business risks.

Acknowledgement of Satisfactory Performance
For the audit period, Procurement had contracts in place and high dollar or high-volume vendors and vendor files contained accurate information. In Accounts Payable, payments for goods and services, along with travel reimbursements, were properly approved, authorized, and accurate.
Engagement Overview

Background

PROCUREMENT
During fiscal year 2020-21, the university initiated approximately 151,000 purchase order transactions totaling approximately $947 million for goods and services (including capital outlay construction). HokieMart, an E-procurement solution, was implemented university-wide in 2007 to provide an electronic mechanism to facilitate the large number of procurement transactions. Since that time, approximately 154 internal departments have been added to the system enabling procurement both internal and external to the university. The contract module in HokieMart enables university departments to use and review available contracts. New features added to HokieMart allow for the ability to search for Small, Women-owned, and Minority-owned Business vendors, to make requests for a new ship to address, to request contract modifications, and to initiate solicitation requests.

ACCOUNTS PAYABLE
During fiscal year 2020-21, Accounts Payable processed approximately 323,000 invoices and disbursed payments totaling more than $919 million. This section within the University Controller’s Office is also responsible for researching and interpreting policies pertaining to university expenditures and training university personnel. Other duties include pre-auditing of disbursement documents in accordance with state and university policy and procedures and determining the appropriateness of invoice payments or if additional documentation is needed to support the business purpose of the public funds expenditure. Accounts Payable responsibilities also include handling special transactions such as foreign draft requests, electronic wiring of funds to vendors, 1099 reporting, recording purchase card transactions, managing the travel charge card program, answering vendor payment questions, initiating stop payments on checks, initiating replacement checks, and imaging all paper documents that support disbursements.

Risk Exposure
The Office of Audit, Risk, and Compliance periodically performs a detailed risk assessment of the university’s auditable entities using factors such as the amount of cash inflows, operating expenditures, research activities, management of sensitive information, and level of external regulation. The goal of the risk assessment is to prioritize those entities within the university that should receive audit attention. The Procurement and Accounts Payable functions were determined to be high-risk due to the large dollar amount of expenditures and high volume of transactions processed annually.

Audit Objectives
In planning the engagement, the audit staff met with Procurement and Accounts Payable management to identify business goals and objectives, potential risks, processes to mitigate those risks, and potential audit objectives. The Auditor-in-Charge performed a risk assessment of the information obtained to evaluate the adequacy and effectiveness
of the processes in place, identify areas of high risk, and establish audit objectives. Audit objectives were identified as follows:

- To determine whether vendor files contained valid vendors and vendor information.
- To determine whether payments for goods and services were properly approved, authorized, and accurate.
- To determine whether travel reimbursements were properly approved and authorized, and appropriately monitored.
- To determine whether high dollar or high-volume vendors have contracts with the university.

**Scope**

To accomplish our objectives, we obtained an understanding of departmental procedures by interviewing key personnel, observing operating processes, evaluating the adequacy of existing policies and procedures, assessing the adequacy of internal controls, evaluating compliance with established policies and procedures, and performing other audit procedures as considered necessary. The audit generally covered the period of January 1, 2020 to December 31, 2020 with certain controls evaluated as of June 2021.

**Criteria**

This independent and objective review was conducted in conformance with the *International Standards for the Professional Practice of Internal Auditing* promulgated by the Institute of Internal Auditors. The standards require planning and performance of the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for observations and conclusions based on the audit objectives.

Management is responsible for establishing and maintaining effective risk management, internal control, and governance. The review was performed using a risk-based audit approach that did not include evaluation of every process, transaction, or activity occurring during the scope period. As a result, complete assurance cannot be provided that all processes are effectively controlled and that all errors, irregularities, and instances of noncompliance occurring during the scope period were identified.
Personnel Involved with Audit

Audit Team Information

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thomas J. Demmer</td>
<td>Auditor-in-Charge</td>
</tr>
<tr>
<td>J. Andrew McWhinney</td>
<td>Staff Auditor II</td>
</tr>
</tbody>
</table>

Management Contacts

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stacy A. King</td>
<td>Associate Controller, Accounting Operations, University Controller’s Office</td>
</tr>
<tr>
<td>Bonnie M. Sutphin</td>
<td>Associate Director for Operations, Procurement Department</td>
</tr>
</tbody>
</table>

Contact Information

For questions regarding this review, contact Justin T. Noble, Director of Internal Audit.

Office of Audit, Risk, and Compliance (0328)
North End Center, Suite 3200
300 Turner Street NW
Blacksburg, Virginia 24061

Email: jtnoble@vt.edu
Phone: (540) 231-5883
Website: www.oarc.vt.edu

Distribution List

Mary W. Helmick
Stacy A. King
Sharon M. Kurek
Kenneth E. Miller
Dwayne L. Pinkney
Timothy D. Sands
Bonnie M. Sutphin
Melinda J. West
Virginia Tech

Audit No. 21-1534: Research: Biosafety

Audit Report
September 2, 2021
# Table of Contents

**Executive Summary**  
Assessment .................................................................................................................. 2  
Acknowledgement of Satisfactory Performance.......................................................... 2  

**Engagement Overview**  
Background ..................................................................................................................... 3  
Risk Exposure .................................................................................................................. 3  
Audit Objectives .............................................................................................................. 3  
Scope ............................................................................................................................... 4  
Criteria ............................................................................................................................ 4  

**Personnel Involved with Audit**  
Audit Team Information ................................................................................................. 5  
Management Contacts .................................................................................................. 5  
Contact Information ..................................................................................................... 5  
Distribution List ............................................................................................................. 5
Executive Summary

Assessment
Our audit indicated that management has designed and implemented controls that are often effective at reducing exposure to many of the biosafety risks the university faces, but improvements are recommended to achieve a fully effective system of internal controls. A low-priority recommendation of a less significant nature was noted regarding the annual review process. Opportunities include broadening coverage of onsite reviews and ensuring annual reviews are monitored for completion.

Acknowledgement of Satisfactory Performance
Identified biosafety research was consistently submitted to the Institutional Biosafety Committee (IBC) for review through the protocol approval process. Protocols were reviewed and approved within a reasonable timeframe. Labs were inspected in a timely manner, and issues were resolved in a reasonable timeframe. Personnel working on biosafety protocols were current on required training.
Engagement Overview

Background
The IBC is the cornerstone of institutional oversight of research that involves the use of biohazardous agents, including recombinant and/or synthetic nucleic acid molecules. The Virginia Tech IBC has been charged with the planning and implementation of the campus Biosafety program with a purpose to ensure the health and safety of all personnel working with biohazardous agents.

The IBC consists of faculty, staff, and community representatives who have responsibility for reviewing all teaching and research activities involving:
- Infectious agents (bacteria, viruses, protozoans, fungi, etc.)
- Biologically derived toxins
- Human and/or non-human primate blood, body fluids, cells or tissue culture
- Recombinant DNA
- Synthetic nucleic acid molecules
- Transgenic animals, invertebrates, and/or plants
- Gene transfer
- Select agents
- Prions
- Dual-use technologies
- Synthetic biology

Environmental Health and Safety (EHS) is responsible for inspecting laboratory spaces where covered research is performed to identify compliance and health and safety issues related to biosafety research and to work with the Principal Investigator (PI) to ensure they are resolved.

Risk Exposure
The Office of Audit, Risk, and Compliance periodically performs a detailed risk assessment of the university’s auditable entities using factors such as the amount of cash inflows, operating expenditures, research activities, management of sensitive information, and level of external regulation. The goal of the risk assessment is to prioritize those entities within the university that should receive audit attention. Research biosafety was determined to be a high-risk activity due to the health and safety risks to the university community as well as the reputational risks of a significant incident related to biosafety.

Audit Objectives
In planning the engagement, the audit staff met with IBC and EHS personnel to identify business goals and objectives, potential risks, processes to mitigate those risks, and potential audit objectives. The Auditor-in-Charge performed a risk assessment of the information obtained to evaluate the adequacy and effectiveness of the processes in place, identify areas of high risk, and establish audit objectives. Audit objectives were identified as follows:
❖ Determine whether research covered by biosafety regulations is reviewed by the IBC and approved protocols are monitored.
❖ Determine whether inspections are performed and inspection issues are resolved in a timely manner.
❖ Determine whether personnel working on IBC protocols have completed required training.

**Scope**
To accomplish our objectives, we obtained an understanding of procedures by interviewing key personnel, examining and analyzing data pertaining to protocol review and approval and inspections, evaluating the adequacy of existing policies and procedures, assessing the adequacy of internal controls, evaluating compliance with established policies and procedures, and performing other audit procedures as considered necessary. The audit covered the period from January 2020 to June 2021.

**Criteria**
This independent and objective review was conducted in conformance with the *International Standards for the Professional Practice of Internal Auditing* promulgated by the Institute of Internal Auditors. The standards require planning and performance of the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for observations and conclusions based on the audit objectives.

Management is responsible for establishing and maintaining effective risk management, internal control, and governance. The review was performed using a risk-based audit approach that did not include evaluation of every process, transaction, or activity occurring during the scope period. As a result, complete assurance cannot be provided that all processes are effectively controlled and that all errors, irregularities, and instances of noncompliance occurring during the scope period were identified.
## Personnel Involved with Audit

### Audit Team Information

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michael A. Dean</td>
<td>Auditor-in-Charge</td>
</tr>
<tr>
<td>J. Andrew McWhinney</td>
<td>Staff Auditor</td>
</tr>
</tbody>
</table>

### Management Contacts

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regina L. Allen</td>
<td>Director IBCP and IBC Administrator</td>
</tr>
<tr>
<td>Daniel Cockrum</td>
<td>Director, Contracts and Agreements, OSP</td>
</tr>
<tr>
<td>Charlotte M. Waggoner</td>
<td>Assistant Director, University Biosafety Officer</td>
</tr>
<tr>
<td>Christopher A. Wakley</td>
<td>Associate Biosafety Officer</td>
</tr>
</tbody>
</table>

### Contact Information

For questions regarding this review, contact Justin T. Noble, Director of Internal Audit.

Office of Audit, Risk, and Compliance (0328)  
North End Center, Suite 3200  
300 Turner Street NW  
Blacksburg, Virginia 24061

Email: jtnoble@vt.edu  
Phone: (540) 231-5883  
Website: www.oarc.vt.edu

### Distribution List

Regina L. Allen  
Clayton C. Caswell  
Cyril R. Clarke  
Lance Franklin  
Sharon M. Kurek  
Lisa M. Lee  
Kenneth E. Miller  
Dwayne L. Pinkney  
Timothy D. Sands  
Daniel Sui  
Charlotte M. Waggoner
Virginia Tech

Audit No. 21-1537 Student Fees

Audit Report
October 27, 2021
# Table of Contents

## Executive Summary
- Assessment ..................................................................................................................... 2
- Acknowledgement of Satisfactory Performance .............................................................. 2
- Summary of Observations with University-wide Impact .................................................. 2

## Engagement Overview
- Background ..................................................................................................................... 3
- Risk Exposure .................................................................................................................. 3
- Audit Objectives ............................................................................................................. 3
- Scope .............................................................................................................................. 4
- Criteria ............................................................................................................................. 4

## Observations with University-wide Impact
- I. Accountability of Course Fee Funds ......................................................................... 5

## Personnel Involved with Audit
- Audit Team Information ............................................................................................... 7
- Management Contacts ................................................................................................. 7
- Contact Information ....................................................................................................... 7
- Distribution List ............................................................................................................. 7
Executive Summary

Assessment
Our audit indicated that management has designed and implemented controls that are effective at reducing the student fee processes’ exposure to business risks. An observation with university-wide impact was noted regarding the processes used to account for expenses paid by course fees.

Acknowledgement of Satisfactory Performance
The Office of the University Bursar (Bursar) and the Office of Budget and Financial Planning (Budget) individually and collectively have policies and procedures in place to effectively administer and monitor billing, budgeting, and maintenance of student fees. The Bursar’s office appears to have adequate and reliable processes for assessing charges to student accounts and for reviewing and addressing assessment exceptions. The Budget office appears to have adequate and reliable processes for allocating funds to units and monitoring budgetary changes as they arise.

Summary of Observations with University-wide Impact
Other observations identified while conducting this review brought forward for management’s consideration include the methodology utilized by colleges and departments that comingle individual fees into a single fund preventing the ability to determine if specific fees are expended in accordance with their approved purposes.
Engagement Overview

Background
The university collects a large number of student fees to ensure the financial integrity of the university and provide for a supportive and robust student experience. These fees enable the university to meet its overarching goals by providing funding for broad and specific needs. The Bursar’s mission includes providing timely and accurate billing and processing of these fees to student accounts. The Budget office provides support to university leadership and management by allocating fees and assisting in the maintenance and management of budgets. Each university fee has various restrictions or acceptable uses that must be closely monitored. Mandatory educational and general fees support specific operational costs and comprehensive fees ensure a holistic, vibrant student experience through the operation of self-supporting (auxiliary) units. Non-mandatory fees for room and board and program fees support costs unique to students and specific disciplines. Lastly, course fees provide for course specific needs, such as materials.

In fiscal year 2019-20, net revenue budgeted for student tuition and fees amounted to approximately $578 million, with approximately $21 million (4%) in program fees and $1.8 million (.3%) in course fees.

Risk Exposure
The Office of Audit, Risk, and Compliance periodically performs a detailed risk assessment of the university’s auditable entities using factors such as the amount of cash inflows, operating expenditures, research activities, management of sensitive information, and level of external regulation. The goal of the risk assessment is to prioritize those entities within the university that should receive audit attention. Student fees were determined to be a high-risk due to financial impact of student fees on university operations and the unique compliance requirements.

Audit Objectives
In planning the engagement, the audit staff met with management within the Budget and Bursar’s offices to identify business goals and objectives, potential risks, processes to mitigate those risks, and potential audit objectives. The Auditor-in-Charge performed a risk assessment of the information obtained to evaluate the adequacy and effectiveness of the processes in place, identify areas of high risk, and establish audit objectives. Audit objectives were identified as follows:

- Determine whether fees are accurately assessed and charged to students.
- Determine whether fund allocations are communicated and whether funds are distributed to units accurately per the Board approved budget and collected revenue.
- Determine whether waivers are approved and executed accurately.
Scope
To accomplish our objectives, we obtained an understanding of departmental procedures by interviewing key personnel, observing operating processes, evaluating the adequacy of existing procedures, assessing the adequacy of internal controls, and performing other audit procedures as considered necessary. The audit covered the period May 2019 – May 2020. Specifically, we reviewed course fees, program fees, and comprehensive fees collected during the scope period.

Criteria
This independent and objective review was conducted in conformance with the International Standards for the Professional Practice of Internal Auditing promulgated by the Institute of Internal Auditors. The standards require planning and performance of the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for observations and conclusions based on the audit objectives.

Management is responsible for establishing and maintaining effective risk management, internal control, and governance. The review was performed using a risk-based audit approach that did not include evaluation of every process, transaction, or activity occurring during the scope period. As a result, complete assurance cannot be provided that all processes are effectively controlled and that all errors, irregularities, and instances of noncompliance occurring during the scope period were identified.
Observations with University-wide Impact

The following information is based on an observation identified while conducting this audit that has the potential for reducing risks of non-compliance with course fee requirements. A recommendation for management’s consideration is provided below.

I. Accountability of Course Fee Funds

In most cases, course fee revenue is transferred to colleges or departments in a single fund. As a result, individual course fees, and at times additional revenues, are comingled into a single fund that does not support comparison of individual course fee expenditures to the generated fee revenue. In general, fees are to be expended in a manner that directly supports the purpose for which it has been approved. By comingling the revenue and expenses together into a single fund, there is no way to monitor if the course fee is being expended in direct support of the specific course for which it is approved, is adequate to meet the course needs, or determine if a course fee is being used to support other non-course related costs.

Over the last two decades, Virginia Tech has operated to minimize the cost of education while fairly attributing costs to beneficiaries. Course fees are a methodology used to assign these costs, which generally support costs for instructional laboratories and materials. Course fees were expected to generate $1.8 million in 2019-20, which is 0.3% of the student tuition and fees revenue budget. All course fees are charged through the university financial system, Banner, and students can utilize financial aid to help with the cost. As a result, today the control environment is much improved by authorizing fees where appropriate and processing them through Banner.

A review of five course fees across four colleges noted four course fees were comingled with other education and general funds. The review evidenced that comingling course fee funds appears to be common practice across all colleges except the College of Natural Resources and Environment (CNRE). In total, CNRE maintains 45 course fees, which are distributed across 39 funds. Other colleges used far fewer funds to hold revenues from a higher count of course fees. For example, one college maintained 58 course fees for a single major, approximately $92,000, in two funds. Another college maintained 14 fees for a single major, approximately $584,000, in four funds.

The course fee approval process is managed by Budget. As part of course fee establishment, units must provide justification of expected costs and enrollment data to establish the per student fee amount. Often the expected costs far exceed the established course fee amount. Additionally, course fee amounts are reviewed annually for appropriateness for continuation, but the justification of costs nor a review of actual costs is conducted unless the unit desires to alter the fee amount.

Student fees are an effective means of obtaining materials and providing services without burdening students who do not participate in the course or activity. However, without
segregating fees from other funds, expenditures cannot be tracked to ensure compliance with the purpose of the fee. Segregating fees and regular cost reviews could provide better accountability and monitoring of how funds are used in direct benefit for the purpose for which the course fee is approved. However, it is noted that separating course fees into individual funds for each course would increase the administrative fiscal management burden.

**Recommendation:**
Management should consider enhancing the course fee process by:

- Determining how to utilize the university financial system to provide better accountability for how individual course fees are expended, such as by segregating course fee funds or requiring the use of expenditure activity codes.
- Determining if a regular course fee review process, to include a review of actual expenditures, would help promote accountability and ensure the correct fee amount has been established.
Personnel Involved with Audit

Audit Team Information

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>J. Andrew McWhinney</td>
<td>Auditor-in-Charge</td>
</tr>
<tr>
<td>Thomas J. Demmer</td>
<td>Senior Auditor</td>
</tr>
<tr>
<td>Dawnetta L. Taylor</td>
<td>Principal Auditor</td>
</tr>
</tbody>
</table>

Management Contacts

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>H. Bruce Heath Jr.</td>
<td>Director of E&amp;G Operations, Office of Budget and Financial Planning</td>
</tr>
<tr>
<td>Travis W. Hundley</td>
<td>Director for Budget Operations, Office of Budget and Financial Planning</td>
</tr>
<tr>
<td>Lauren Lawson</td>
<td>University Bursar, Office of the University Bursar</td>
</tr>
<tr>
<td>Brennan E. Shepard</td>
<td>Director for Financial Planning, Office of Budget and Financial Planning</td>
</tr>
</tbody>
</table>

Contact Information
For questions regarding this review, contact Justin T. Noble, Director of Internal Audit.

Office of Audit, Risk, and Compliance (0328)  Email: jtnoble@vt.edu
North End Center, Suite 3200  Phone: (540) 231-5883
300 Turner Street NW  Website: www.oarc.vt.edu
Blacksburg, Virginia 24061

Distribution List
Cyril R. Clarke
Jeffrey L. Earley
Timothy L. Hodge
Sharon M. Kurek
Lauren Lawson
Kenneth E. Miller
Dwayne L. Pinkney
Timothy D. Sands
G. Don Taylor Jr.
Melinda J. West
Virginia Tech

Audit No. 21-1544, Virginia Tech Carilion School of Medicine

Policy Compliance Review
Audit Report
June 29, 2021
# Table of Contents

**Executive Summary**  
Assessment .................................................................................................................. 2  
Policy Compliance Scorecard ...................................................................................... 2  

**Engagement Overview**  
Relevant University Policies .......................................................................................... 4  
Criteria ........................................................................................................................... 5  

**Policy Compliance Issues and Recommendations**  
I. Wage Payroll ............................................................................................................... 6  
II. Leave Reporting ....................................................................................................... 7  
III. P14 Appointments .................................................................................................. 7  
IV. Information Technology ......................................................................................... 8  

**Personnel Involved with Audit**  
Audit Team Information ............................................................................................... 10  
Management Contacts .................................................................................................. 10  
Contact Information ...................................................................................................... 10  
Distribution List ............................................................................................................. 11
Executive Summary

Assessment
Our audit indicated that management has designed and implemented controls that are often effective at reducing the Virginia Tech Carilion School of Medicine’s (VTCSOM) exposure to many of the business risks it faces, but improvements are recommended to achieve a fully effective system of internal controls. Audit recommendations were issued to management where opportunities for further improvement were noted in the areas of wage payroll, leave reporting, P14 appointments, and information technology.

Policy Compliance Scorecard
The following is a scorecard summarizing the activities reviewed. The scorecard ratings are assessed based on a judgmental determination of the effectiveness of internal controls and compliance with policies for each specific activity tested. For each functional area that received below an effective rating, a detailed presentation of the issues noted along with any recommendations can be found beginning in the Policy Compliance Issues and Recommendations section.

<table>
<thead>
<tr>
<th>Functional Area</th>
<th>Expected Condition (Effective Rating)</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fiscal Responsibility</td>
<td>Monthly reconciliation reports are adequately documented, reviewed timely, and properly approved.</td>
<td>🟢</td>
</tr>
<tr>
<td>Employee Compensation and Leave Reporting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wage Payroll/ Overtime</td>
<td>Hours worked by employees are appropriately documented and approved, entered correctly, and reconciliation reports are reviewed in a timely manner and appropriately maintained. Employees receive prior approval to earn overtime compensation and no patterns of abuse are observed.</td>
<td>🟢</td>
</tr>
<tr>
<td>Leave Reporting</td>
<td>Employee leave reports are submitted timely, adequately documented, and properly approved.</td>
<td>🟢</td>
</tr>
<tr>
<td>P14 Appointments</td>
<td>P14 appointments are adequately documented and properly approved.</td>
<td>🟢</td>
</tr>
<tr>
<td>Expenditures</td>
<td>Expenditures are necessary, reasonable, and directly related to the goals and mission of the university. Cardholder purchases are adequately documented, reconciled timely, and properly approved.</td>
<td>🟢</td>
</tr>
<tr>
<td>Functional Area</td>
<td>Expected Condition (Effective Rating)</td>
<td>Rating</td>
</tr>
<tr>
<td>-----------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------</td>
<td>--------</td>
</tr>
<tr>
<td><strong>Fixed Assets Management</strong></td>
<td>Equipment coordinators are properly appointed, equipment custodians are up-to-date in Banner, and home use asset documentation is maintained.</td>
<td>![Green]</td>
</tr>
<tr>
<td><strong>Funds Handling</strong></td>
<td>Cash deposits are made timely, and appropriate documentation is on file to support the deposit amount. Petty cash funds are fully accounted for, and periodic verifications and monthly reconciliations are performed.</td>
<td>![Green]</td>
</tr>
<tr>
<td><strong>University Key Control</strong></td>
<td>Effective record-keeping systems are in place, periodic inventories of keys are conducted, and unissued keys are properly safeguarded.</td>
<td>![Green]</td>
</tr>
<tr>
<td><strong>Information Technology (IT)</strong></td>
<td>Security patches and anti-virus software are automatically updated, firewalls are enabled, strong passwords are enforced, and sensitive digital information is adequately safeguarded.</td>
<td>![Green]</td>
</tr>
<tr>
<td><strong>Emergency Preparedness</strong></td>
<td>Emergency action and continuity of operations plans are properly documented, up-to-date, and distributed to employees within the department or organization.</td>
<td>![Green]</td>
</tr>
<tr>
<td><strong>State Vehicle Management</strong></td>
<td>Appropriate documentation is maintained on usage and service of state vehicles.</td>
<td>![Green]</td>
</tr>
<tr>
<td><strong>Family Education Rights and Privacy Act (FERPA)</strong></td>
<td>Appropriate access to an individual's academic record is maintained.</td>
<td>![Green]</td>
</tr>
<tr>
<td><strong>Conflict of Interest</strong></td>
<td>Potential conflicts of interest and outside employment are properly disclosed and approved.</td>
<td>![Green]</td>
</tr>
</tbody>
</table>

**Scorecard Legend**

- ![Green] Effective
- ![Yellow] Improvements are Recommended
- ![Orange] Significant Improvements are Needed
- ![Red] Unreliable
Engagement Overview

Relevant University Policies
The objective of this review is to help improve risk management and risk control systems by evaluating policy compliance with the following university policies and procedures:

- **Fiscal Responsibility** – policy 3100 requires that managers, including but not limited to department heads and center directors, perform monthly reviews of financial activities.

- **Human Resources: Employee Compensation and Leave Reporting** (Wage Payroll, Banner HRIS Access, Overtime Compensation, Leave Reporting, and P14 Appointments) – policies 4296, 4298, 4300, and 4320 establish the foundation for compensating salaried and wage employees. Additionally, policies 4026, 4060, 4320, 4415, and the Leave Manual establish guidelines relating to staffing, recruitment, equity and access, professional development, compensation and performance management, and employee relations. The university guidelines for leave accounting are included in various staff and faculty handbooks and policies. Associated record retention is also reviewed.

- **Expenditures** – policy 3200 requires persons authorizing expenditures to assure expenditures of university funds are necessary, reasonable, and directly related to the goals and mission of the university. The Procurement Department’s Corporate Purchasing Card Procedure establishes responsibilities for cardholders and department heads in conducting university business with the Corporate Purchasing Card.

- **Fixed Assets Management** – policy 3950 assigns responsibility and accountability for university assets to the organizational unit maintaining custody of the asset. The policy requires the unit to assume proprietary control over all equipment and other fixed assets assigned to the unit.

- **Funds Handling (Cash Deposits and Petty Cash Management)** – policy 3600 and related funds handling guidelines define the required cash handling practices for university departments. Additionally, the Office of the University Bursar (OUB) defines the required funds handling practices for petty cash and petty cash disbursement funds.

- **University Key Control** – policy 5620 establishes access control practices that university departments should follow to limit and monitor physical access to university buildings and property.


State Vehicle Management – policy 5500 establishes responsibilities and procedures to ensure proper operation, purchasing, disposal, inventory, and maintenance of all state vehicles.

Family Educational Rights Privacy Act (FERPA) – various university policies include reference to requirements for university constituents regarding stewardship and protection of academic records.

Conflict of Interest – policies 4070 and 13010 establish the framework for the management and monitoring of external activities to promote and safeguard the interests of the university.

Criteria
This independent and objective review was conducted in conformance with the International Standards for the Professional Practice of Internal Auditing promulgated by the Institute of Internal Auditors. The standards require planning and performance of the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for observations and conclusions based on the audit objectives.

Management is responsible for establishing and maintaining effective risk management, internal control, and governance. This review was performed using a risk-based audit approach that did not include evaluation of every process, transaction, or activity occurring during the scope period. As a result, complete assurance cannot be provided that all processes are effectively controlled and that all errors, irregularities, and instances of noncompliance occurring during the scope period were identified.

Scope
The Office of Audit, Risk and Compliance reviewed adherence to university policies in the areas reporting to VTCSOM during the period February 1, 2020 to January 31, 2021.
Policy Compliance Issues and Recommendations

The following recommendations are based on our observations and conclusions regarding the effectiveness of internal controls and compliance with policies for departments reporting to VTCSOM. The views of management and their associated responses to audit recommendations are presented as management action plans.

I. Wage Payroll

Wage payroll transactions were not properly reconciled for five of six (83%) reconciliations sampled. Management indicated that VTCSOM had modified operations during COVID (March 2020 – October 2020) and failed to reconcile Time Clock Plus wage information to the payroll information in Banner as required by university policy 4298, Wage Employee Time Worked Records. It was noted that VTCSOM uses the Web Distribution system after each payroll is processed and reconciles the Wage Reconciliation Report (PZRTED) to the Time Clock Plus Summary Report to ensure any errors are promptly addressed; however, in the remote environment this did not occur. Since identified during the engagement, management has requested PZRTED reports and have begun reconciling wage payroll for those not on file. A review of 15 records across 6 pay periods sampled did not reveal any discrepancies between the two systems.

Timely reconciliation of the Time Clock Plus wage information to the payroll information in Banner ensures that any discrepancies are promptly addressed before payment is issued to employees.

**Recommendation:**
Management should ensure that wage payroll reconciliations are completed promptly to ensure that any errors are addressed before payment is issued to employees. Additionally, management should develop alternative procedures so that wage reconciliations continue even if work locations change.

**Management Action Plan:**
VTCSOM Human Resources will use the Wage Reconciliation Report (PZRTED) and reconcile it with the Time Clock Plus Summary Report promptly at each payroll period to ensure any errors are addressed before payments are issued to employees. Additionally, VTCSOM Human Resources department will assign a backup reconciliation member from its staff to make sure reconciliations are done promptly in the event the primary reconciler is unavailable or unable to complete the reconciliation.

Jamie A. Hollimion, VTCSOM Manager of Human Resources, is responsible for implementing this action plan by January 10, 2022.
II. Leave Reporting

Of the 743 leave reports required to be submitted by 66 employees, 58 (8%) reports attributable to 26 employees were in error. Of the erroneous leave reports, 57 were submitted late and subsequently approved late and one was submitted timely and approved late. The degree of lateness ranged between 7 and 88 days, at an average of 24 days. It was noted that all leave reports required to be submitted were submitted.

**Recommendation:**
Management should improve the leave reporting process by requiring leave reports to be submitted timely in adherence to leave reporting policies and procedures.

**Management Action Plan:**
Management will transition leave approval from one central approver to managers of each functional area to ensure leave is monitored and allow for more timely communication and accuracy of the leave approval process. Additionally, VTCSOM Human Resources will continue to send out leave reminder notifications to all employees and monitor leave approvals to ensure units are in compliance with the leave policy. Individuals who have not submitted their leave report or managers who have not approved leave reports will be contacted by VTCSOM Human Resources to advise them of the situation. If the situation is not remedied, then VTCSOM Human Resources will contact the senior leadership of that functional unit. Furthermore, VTCSOM Human Resources will assign a backup staff member to run compliance reports if the primary person is unable or has not done so.

Jamie A. Hollimion, VTCSOM Manager of Human Resources, is responsible for implementing this action plan by January 10, 2022.

III. P14 Appointments

P14 appointment documentation was not in compliance with university policy 4296, Adjunct and Wage Faculty Payments, as VTCSOM Human Resources did not consistently prepare P14A forms or offer letters. VTCSOM Human Resources noted their understanding was that P14A forms only needed to be completed when the payment was $5,000 or greater and they noted that they do not typically send out the offer letters until they are sure of the amount to be paid, which is often after the appointment has ended as many of the instructors are paid a set rate per hour. VTCSOM Human Resources also stated that they were aware that they had missed preparing some of the forms and letters.

Of the 25 P14s reviewed:
- 18 (72%) did not have a P14A form on file, therefore, the form could not be signed by management; however, the VTCSOM Finance Office was able to provide documentation of the review and approval of the payments.
- 10 (40%) did not have a signed offer letter on file.

According to university policy, the P14A form and offer letter must be completed and retained with the appropriate signatures indicating approval of the faculty wage appointment. Consulting with the Division of Human Resources to develop and
Implement an efficient and effective P14 process will ensure that P14 appointments are adequately documented.

**Recommendation:**
Management should improve the P14 process by consulting with the Division of Human Resources to develop and implement an effective and efficient P14 process, including issuing timely offer letters that accommodates the VTCSOM unique P14 appointments.

**Management Action Plan:**
VTCSOM will work with the Division of Human Resources to develop and implement an offer letter template that meets or exceeds policy 4296 standards. VTCSOM Human Resources will:
- Evaluate gaps in communication and ensure personnel are aware of the policy requirements by August 31, 2021.
- Meet with Division of Human Resources Consulting and Strategic Initiatives department and confer with the Division of Human Resources Policies and Compliance department to develop an effective and efficient P14 process by October 31, 2021.
- Implement the new P14 process by March 1, 2022.
- Perform a small self-review that will evaluate action plan process and make sure that all hire files comply with policy 4296 by March 1, 2022 and make any necessary adjustments to the process.

Jamie A. Hollimion, VTCSOM Manager of Human Resources, is responsible for implementing this action plan by March 1, 2022.

**IV. Information Technology**
Review of IT controls found that VTCSOM actively worked to identify, manage, and control risks facing their IT environment; however, three IT issues were identified. Specifically,

- **Encryption** – VTCSOM indicated whole-disk encryption was not implemented on moderate-risk endpoints. Whole-disk encryption is required by the Minimum Security Standards on all moderate and high-risk endpoints. Whole-disk encryption protects the data on a computer in the event it is lost or stolen.

- **Two-Factor Authentication** – VTCSOM servers did not require two-factor authentication for logins. The Minimum Security Standards specifies two-factor authentication is required for interactive user and administrator logins. Two-factor authentication adds a second method to authenticate users which helps prevent against the misuse of a compromised account.

- **ITSO Notification of High-Risk Servers** – VTCSOM had not provided a listing of high-risk servers to the Information Technology Security Office (ITSO). The Minimum Security Standards require ITSO be sent a list of departments' high-risk
servers. Notifying ITSO of high-risk servers allows ITSO to notify system administrators of any probes or attacks they detect.

Recommendation:
Management should improve information technology practices by:
- Implementing whole-disk encryption on all moderate and high-risk endpoints.
- Implementing two-factor authentication on all servers.
- Notifying ITSO of high-risk servers.

Management Action Plan:
Management will improve information technology practices by:
- Implementing whole-disk encryption on all new devices going forward and will ensure all moderate and high-risk endpoints without whole-disk encryption will be encrypted or replaced with one that can.
- Implementing two-factor authentication on all servers.
- Notifying ITSO of high-risk servers.

Brian Brindle, Senior Director of Information Technology, is responsible for implementing this action plan by January 10, 2022.
Personnel Involved with Audit

Audit Team Information

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dawnetta L. Taylor</td>
<td>Auditor-in-Charge</td>
</tr>
<tr>
<td>Thomas J. Demmer</td>
<td>Senior Auditor</td>
</tr>
<tr>
<td>Isabel V. Soto</td>
<td>Graduate Assistant Auditor</td>
</tr>
</tbody>
</table>

Management Contacts

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brian Brindle</td>
<td>Senior Director of Information Technology, VTCSOM</td>
</tr>
<tr>
<td>Karen L. Burns</td>
<td>Executive Assistant to the Dean, VTCSOM</td>
</tr>
<tr>
<td>Monica Crouse</td>
<td>HR Generalist, Human Resources</td>
</tr>
<tr>
<td>Sue B. Gregory</td>
<td>Director of Finance, VTCSOM</td>
</tr>
<tr>
<td>Daniel P. Harrington</td>
<td>Vice Dean, VTCSOM</td>
</tr>
<tr>
<td>Lisa Howard</td>
<td>Administrative Services Coordinator, VTCSOM</td>
</tr>
<tr>
<td>Martha A. Mullins</td>
<td>Business Manager, VTCSOM</td>
</tr>
<tr>
<td>Hope V. Reynolds</td>
<td>Senior Director, Enrollment Management and Assistant Registrar</td>
</tr>
</tbody>
</table>

Contact Information

For questions regarding this review, contact Justin T. Noble, Director of Internal Audit.

Office of Audit, Risk, and Compliance (0328)  
North End Center, Suite 3200  
300 Turner Street NW  
Blacksburg, Virginia 24061  

Email: jtnoble@vt.edu  
Phone: (540) 231-5883  
Website: www.oarc.vt.edu
Distribution List
Brian Brindle
Cyril R. Clarke
Bryan E. Garey
Sue B. Gregory
Daniel P. Harrington
Mary W. Helmick
Jamie A. Hollimion
Christopher H. Kiwus
Sharon M. Kurek
Lauren Lawson
Lee A. Learman
Lisa M. Lee
Scott F. Midkiff
Kenneth E. Miller
Michael J. Mulhare
Dwayne L. Pinkney
Timothy D. Sands
Richard A. Sparks Jr.
Melinda J. West
Review and Approval of Charters

COMPLIANCE, AUDIT, AND RISK COMMITTEE

November 7, 2021

The International Professional Practices Framework (IPPF) provides the conceptual framework that organizes the authoritative guidance promulgated by the Institute of Internal Auditors (IIA). The Office of Audit, Risk, and Compliance (OARC) conducts its activities in accordance with the IIA IPPF. In accordance with Attribute Standard 1000 – Purpose, Authority, and Responsibility and 2060 – Reporting to Senior Management and the Board, the chief audit executive must periodically review the internal audit charter and present it to senior management and the board for approval.

According to the IPPF, the internal audit charter is a formal document that defines the internal audit activity's purpose, authority, and responsibility. The internal audit charter establishes the internal audit activity's position within the organization, including the nature of the chief audit executive's functional reporting relationship with the board; authorizes access to records, personnel, and physical properties relevant to the performance of engagements; and defines the scope of internal audit activities. Final approval of the internal audit charter resides with the board.

Therefore, the Compliance, Audit, and Risk Committee Charter for the Board of Visitors Compliance, Audit, and Risk Committee, which was last updated in November 2017, has been reviewed by OARC and no changes are proposed. Also, the Charter for the Office of Audit, Risk, and Compliance, which was last updated in November 2020, has been reviewed by OARC and no changes are proposed.
I. PURPOSE

The primary purpose of the Compliance, Audit, and Risk (CAR) Committee is to assist the Board of Visitors in fulfilling its fiduciary responsibilities related to oversight of:

- The university’s enterprise risk management program, as an essential part of a strong control environment, to ensure that risk appetite aligns with management’s decisions and strategy,
- Adherence to this charter, including reviewing audits conducted by the Office of Audit, Risk, and Compliance and external bodies and providing guidance on auditing concerns to the full Board,
- The university’s compliance with all federal, state, and local laws and executive orders; and policies promulgated by academic and athletic accrediting bodies, regulatory agencies, funding agencies, and the State Council of Higher Education for Virginia,
- The maintenance of effective systems of internal control, including the integrity of the university’s financial accounting and reporting practices, and
- The performance of the university’s internal and independent audit functions.

The function of the Committee is oversight. University management is responsible for the preparation, presentation, and integrity of the university’s financial statements, fiscal plans, and other financial reporting. University management is also responsible for maintaining appropriate financial accounting and reporting policies, procedures, and controls designed to assure compliance with generally accepted accounting principles and applicable laws and regulations. The Office of Audit, Risk, and Compliance examines and evaluates the adequacy and effectiveness of the university’s internal control systems. The university’s external auditor, the state Auditor of Public Accounts, is responsible for planning and conducting the financial statement examination in accordance with generally accepted government auditing standards.

This document and the related meeting planner are intended to identify and document the Committee’s oversight responsibilities in order that such sound practices will continue despite the turnover of Committee members. It also outlines the regularly scheduled review activities that will ensure that the university continues to have an independent and objective internal audit function and obtains the greatest possible benefit from its external audits.

II. MEETINGS

By statute the Board of Visitors, including the CAR Committee, must meet once a year, but traditionally holds four meetings a year. Additional meetings may occur more frequently as circumstances warrant. The Committee Chair should discuss the agenda with the
Executive Director of Audit, Risk, and Compliance prior to each Committee meeting to finalize the meeting agenda and review the items to be discussed.

III. RESPONSIBILITIES

In performing its audit oversight responsibilities, the CAR Committee shall:

A. General

1. Adopt a formal written charter that specifies the Committee’s responsibilities and practices. The charter should be reviewed annually and updated as necessary.
2. Maintain minutes of meetings.
3. Authorize audits within the Committee’s scope of responsibilities.
4. Report Committee actions to the Board of Visitors with such recommendations as the Committee may deem appropriate.
5. Meet in closed session, consistent with state law, (without members of senior management present, when appropriate) with the external auditors and/or the Executive Director of Audit, Risk, and Compliance to discuss matters that the Committee or the auditors believe should be discussed privately. The Executive Director of Audit, Risk, and Compliance shall have a regularly scheduled opportunity to meet privately with the Committee at each of its four annual meetings.

B. Risk Management and Internal Control

1. Review the university’s enterprise risk management (ERM) efforts including the program structure and the processes for assessing significant risk exposures and the steps management has taken to monitor and control such exposures, as well as the university’s risk assessment and risk management policies.
2. Consider the effectiveness of the university’s internal control systems, including those over information technology and financial reporting.
3. Understand the scope of internal and external audit reviews of internal control, and obtain reports on significant potential issues and recommendations, together with management’s responses.
4. Review management’s written responses to significant potential issues and recommendations of the auditors, including the timetable to correct the identified weaknesses in the internal control system.
5. Advise management that they are expected to provide a timely analysis of significant reporting issues and practices.

C. External Auditors

1. Make inquiries of management and the independent auditors regarding the scope of the external audit for the current year.
2. As necessary, discuss with the external auditors their processes for identifying and responding to key audit and internal control risks.
3. Review the coordination of internal and external audit procedures to promote an effective use of resources and ensure complete and efficient coverage of the university’s risks.

4. Meet with external auditors at the completion of the financial statements audit to receive and discuss the audit report(s), and determine whether external auditors are satisfied with the disclosure and content of the financial statements, including the nature and extent of any significant changes in accounting principles.

5. Review the results and organizational response stemming from significant reviews by regulatory agencies or other external entities (non-financial statement audits).

D. Internal Auditors

1. Approve the charter for the Office of Audit, Risk, and Compliance. The charter should be reviewed annually and updated as necessary.

2. Review and approve the annual audit plan and any significant changes to the plan.

3. Review the effectiveness of the internal audit function, including staffing resources, financial budget, training, objectivity and reporting relationships.

4. Review completed audit reports and progress reports on executing the approved annual audit plan.

5. Review the results of the Office of Audit, Risk, and Compliance’s Quality Assurance and Improvement Program (QAIP), including results of internal assessments (both ongoing and periodic) and external assessments conducted at least once every five years by a qualified, independent assessor or assessment team from outside the university.

6. Inquire of the Executive Director of Audit, Risk, and Compliance regarding any difficulties encountered in the course of the audits, including any restrictions on the scope of work or access to required information.

7. Review and concur in the appointment, replacement, reassignment, or dismissal of the Executive Director of Audit, Risk, and Compliance.

8. Evaluate the Executive Director of Audit, Risk, and Compliance’s annual performance and make decisions regarding compensation.

E. Compliance, Ethics, and Business Conduct

1. Support leadership by promoting and supporting a university-wide culture of ethical and lawful conduct.

2. Require management to periodically report on procedures that provide assurance that the university’s mission, values, and codes of conduct are properly communicated to all employees.

3. Review the programs and policies of the university designed by management to assure compliance with applicable laws and regulations and monitor the results of the compliance efforts.

4. Monitor the university’s conflict of interest policies and related procedures.
The “CAR Agenda Meeting Planner” is an integral part of this document. If the Board of Visitors meets less frequently than anticipated, the Planner will be adjusted accordingly.

Virginia Polytechnic Institute and State University
Compliance, Audit, and Risk Committee of the Board of Visitors
CAR Agenda Meeting Planner

<table>
<thead>
<tr>
<th>A=Annually; Q=Quarterly; AN=As Necessary</th>
<th>Frequency</th>
<th>Planned Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1, Q2, Q3, Q4 based on Fiscal Year (July – June)</td>
<td>A Q AN Q1 Q2 Q3 Q4</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Aug Nov Mar Jun</td>
</tr>
</tbody>
</table>

A. General

1. Review and update CAR Committee charter
   
2. Approve and maintain minutes of previous meeting
   
3. Authorize audits within the Committee’s scope of responsibilities
   
4. Report Committee actions to the Board of Visitors with recommendations deemed appropriate
   
5. Meet in closed session with Executive Director of Audit, Risk, and Compliance, and with external auditors, as needed

B. Risk Management and Internal Control

1. Review the university’s ERM efforts including the program structure, processes, risk assessment, and risk management policies
   
2. Consider the effectiveness of the university’s internal control systems
   
3. Understand the scope of internal and external audit reviews of internal control, and obtain reports on significant potential issues and recommendations, together with management’s responses
   
4. Review management’s written responses to significant potential issues and recommendations of the auditors, including the timetable to correct identified weaknesses in the internal control system
   
5. Advise management that they are expected to provide a timely analysis of significant current reporting issues and practices

C. External Auditors

1. Make inquiries of management and the independent auditors regarding the scope of the external audit for the current year
   
2. Discuss with the external auditors their processes for identifying and responding to key audit and internal control risks
   
3. Review the coordination of internal and external audit procedures to promote an effective use of resources and ensure complete and efficient coverage of the university’s risks
<table>
<thead>
<tr>
<th>A=Annually; Q=Quarterly; AN=As Necessary</th>
<th>Frequency</th>
<th>Planned Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Q1, Q2, Q3, Q4 based on Fiscal Year (July – June)</strong></td>
<td>A Q AN</td>
<td>Q1 Q2 Q3 Q4</td>
</tr>
<tr>
<td></td>
<td>Aug Nov Mar Jun</td>
<td></td>
</tr>
<tr>
<td>4. Meet with external auditors at the completion of the financial statements audit to receive and discuss the audit report(s)</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>5. Review results of other significant reviews from regulatory agencies or other external entities</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td><strong>D. Internal Auditors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Review and approve the charter for the Office of Audit, Risk, and Compliance, if changes are needed</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>2. Review the draft annual audit plan</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>3. Approve the annual audit plan</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>4. Review the effectiveness of the internal audit function, including staffing resources, financial budget, training, objectivity, and reporting relationships</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>5. Review the results of the QAIP, including internal and external assessments</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>6. Review completed audit reports and progress reports on executing the approved annual audit plan</td>
<td>X</td>
<td>X X X X X</td>
</tr>
<tr>
<td>7. Inquire of the Executive Director of Audit, Risk, and Compliance regarding any difficulties encountered in the course of the audits, including any restrictions on the scope of work or access to required information</td>
<td>X</td>
<td>X X X X</td>
</tr>
<tr>
<td>8. Review and concur in the appointment, replacement, reassignment, or dismissal of the Executive Director of Audit, Risk, and Compliance</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>9. Evaluate the Executive Director of Audit, Risk, and Compliance’s annual performance and make decisions regarding compensation</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td><strong>E. Compliance, Ethics, and Business Conduct</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Convey commitment to ethical conduct through periodic receipt of management reports on how the university’s mission, values, and codes of conduct are properly communicated to all employees</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>2. Review the programs and policies of the university designed to assure and monitor compliance</td>
<td>X</td>
<td>X X X X X</td>
</tr>
<tr>
<td>3. Monitor the university’s conflict of interest policies and related procedures</td>
<td>X</td>
<td>X X X X X</td>
</tr>
</tbody>
</table>
Charter for the Office of Audit, Risk, and Compliance

1.0 Purpose

This policy outlines the policies and procedures covering the Office of Audit, Risk, and Compliance (OARC) at Virginia Polytechnic Institute and State University and serves as a charter for the department.

2.0 Policy

It is the policy of the Compliance, Audit, and Risk (CAR) Committee of the Board of Visitors and the management of Virginia Polytechnic Institute and State University to support the maintenance of an internal audit function to assist in the effective discharge of their fiduciary responsibilities in assessing the effectiveness of the internal control environment.

The Office of Audit, Risk and Compliance (OARC) performs independent internal audits, plans and oversees the university risk management process, and oversees the institutional compliance program. OARC’s mission is to enhance and protect organizational value by providing risk-based and objective assurance, advice, and insight as follows:

1. Audit: Provide independent, objective assurance and advisory activities designed to add value and improve university operations. It helps the university accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control, and governance processes.

2. Risk Management: Provide oversight of the enterprise risk management (ERM) program by creating and maintaining the framework to identify, assess, and manage risk.

3. Compliance: Provide oversight of the institutional compliance program and the distributed processes that support compliance across the university.

2.1 Scope of the Office of Audit, Risk, and Compliance

The scope of OARC’s work is to determine whether Virginia Tech’s risk management, internal controls, compliance activities and governance processes, as designed and represented by management, are adequate and functioning in a manner to ensure:

- Programs, plans, and strategic objectives are achieved.
- Risks are appropriately identified, managed, and considered in institutional decision making.
- Significant financial, managerial and operating information is accurate, reliable, and timely.
- Compliance with policies, procedures, standards, laws, and regulations.
- Measures are taken to foster continuous improvement in control processes.
- Resources are acquired, managed, and protected in an economical, efficient, and effective manner.
2.2 Independence and Objectivity

Independence is essential to enable the internal audit function to accomplish its purpose. Accordingly, the Executive Director of Audit, Risk, and Compliance reports functionally to the CAR committee and also serves in a staff role to the committee. For day-to-day operations, the Executive Director of Audit, Risk, and Compliance reports administratively to the President. These reporting relationships allow for direct and unrestricted access to the President and the CAR Committee of the Board of Visitors.

All work will be conducted in an objective and independent manner. Staff will maintain an impartial attitude in selecting and evaluating evidence and in reporting results. Independence in fact and appearance enables unbiased judgments essential to the proper conduct of the department’s scope of work. OARC staff have the responsibility to maintain high standards of conduct, professionalism, independence, and character to carry out proper and meaningful internal auditing within the university.

Internal auditors will have no direct operational responsibility or authority over any of the activities audited. Accordingly, internal auditors will not implement internal controls, develop procedures, install systems, prepare records, or engage in any other activity that would normally be audited. Therefore, internal audit review and appraisal procedures do not in any way substitute for the responsibilities assigned to other persons in the organization.

2.3 Authority

OARC has unrestricted access to all university departments, records, reports, activities, property, and personnel that they deem necessary to discharge their audit responsibilities. OARC will exercise discretion in their review to assure the necessary confidentiality of matters that come to its attention.

OARC will allocate resources, set frequencies, select subjects, determine scopes of work, apply techniques required to accomplish audit objectives, and issue reports. OARC will also obtain assistance for specialized services from within or outside the university in order to complete engagements.

2.4 Auditing Standards

The internal audit function will conduct its activities in accordance with the Institute of Internal Auditors’ International Professional Practices Framework including the Core Principles for the Professional Practice of Internal Auditing, Code of Ethics, the International Standards for the Professional Practice of Internal Auditing, and the Definition of Internal Auditing.

2.5 Systems Planning and Development

Management will consult OARC during the planning, development, and modification of major financial or operating systems and procedures (manual and automated) to ensure that:

- Reasonable and adequate internal controls exist.
- Systems or procedural documentation is complete and appropriate.
- An adequate audit trail exists.

OARC’s participation will be designed to help ensure safeguarding of information assets and compliance with appropriate procedures and aid management efficiency by avoiding costly systems or procedural changes at later dates.
2.6 Responsibilities of the Executive Director of Audit, Risk, and Compliance

The Executive Director of Audit, Risk, and Compliance has primary responsibility for the proper maintenance and management of OARC to ensure that the work fulfills the purposes and responsibilities established in this policy statement. The Executive Director of Audit, Risk, and Compliance is specifically charged with the following responsibilities:

- Coordinating all auditing activities to provide a central source of information for management and the CAR Committee regarding all audit activities and to provide comprehensive, cost-effective audit coverage for the university.
- Facilitating the university’s efforts regarding enterprise risk management (ERM) on behalf of senior management and the CAR Committee.
- Coordinating the university’s institutional compliance program to be a resource and serve as a catalyst for the achievement of university best practices in compliance-related subject matter areas.
- Establishing written policies and procedures for OARC and directing its technical and administrative functions.
- Developing, submitting for approval, and executing comprehensive risk-based annual audit plan to carry out departmental responsibilities.
- Maintaining a professional audit staff with sufficient knowledge, skills, experience, and professional certifications to meet the requirements of this charter, and provide information on the sufficiency of department resources.
- Recommending improvements in controls designed to increase efficiency, safeguard university resources, and ensure compliance with government laws and regulations.
- Issuing an annual summary report of activities to the CAR Committee.
- Appraising the adequacy of the action taken by management to correct significant reported internal control weaknesses and deficient conditions, and reporting this information to the CAR Committee and responsible senior manager as appropriate.
- Establishing and maintaining a Quality Assurance and Improvement Program to evaluate the operations of the department, including periodic internal self-assessments and external peer reviews at least once every five years by qualified persons who are independent of the university, the results of which will be presented to senior management and the CAR Committee.
- Communicating directly with the CAR Committee any matters considered to warrant its attention as appropriate, including trends and emerging issues that could impact the university.
- Performing sufficient tests and examinations to determine and report to management, the CAR Committee, and the appropriate authorities the extent of any fraud, waste, and abuse and to identify the weaknesses in control procedures that may have allowed the fraudulent activity to occur. The investigation of the specific event with the objective of recovery and/or prosecution is the responsibility of the appropriate law enforcement agency and Commonwealth’s Attorney, based on jurisdiction.

2.7 Audit Reports

OARC will issue audit reports and/or memoranda in all audit activities performed. The format and style of the report will be determined by the Executive Director of Audit, Risk, and Compliance, depending upon the nature and conditions surrounding the audit. Communications must include the engagement’s objectives and scope as
well as applicable conclusions, recommendations, and action plans. The formulation of overall opinions requires
consideration of the engagement results and their significance. All reports on engagements scheduled in the annual
audit plan will be issued to the members of the CAR Committee; the President; appropriate senior management;
and other appropriate personnel as deemed necessary by the Executive Director of Audit, Risk, and Compliance. In
addition, reports approved at open meetings of the committee shall be made available to the public in accordance
with state statutes. In certain circumstances, the Executive Director of Audit, Risk, and Compliance may decide,
with the approval of the Chair of the CAR Committee, to restrict the issuance of an audit report to certain members
of management and/or the committee.

2.8 Responsibility for Corrective Action

Senior management to whom the audited department, activity, or agency reports organizationally is responsible for
the issuance of a written response to recommendations made or deficient conditions reported. The responses should
be submitted to the Executive Director of Audit, Risk, and Compliance for inclusion in the issued audit report. At
each meeting, the CAR Committee will receive status updates of recommendations in the process of
implementation.

2.9 Coordination with External Auditing Agencies

To ensure appropriate coordination and completeness of the CAR Committee reporting responsibilities, senior
managers should promptly notify the Executive Director of Audit, Risk, and Compliance of any external audits or
reviews. OARC will coordinate its audit efforts with those of the Auditor of Public Accounts or other external
auditing agencies by participating in the planning and definition of the scope of proposed audits so the work of all
auditing groups is complementary, and their combined efforts provide comprehensive, cost-effective audit coverage
for the university. The Executive Director of Audit, Risk, and Compliance will work with the appropriate members
of management to determine the level of involvement of OARC, if any, in the performance of each external audit.
Duplication of work will be avoided as much as possible.

2.10 Special Projects

The Executive Director of Audit, Risk, and Compliance is empowered to conduct special audit projects, reviews,
advisory services, or investigations at the request of the President, Vice Presidents or their designee, and the CAR
Committee. Special projects assist management in meeting its objectives; promoting economy and efficiency in
the administration of its programs and operations; or preventing and detecting fraud, waste, and abuse, examples of
which may include facilitation of risk and control evaluation, training, and advisory services.

3.0 Procedures

Principal guidance and direction on how OARC accomplishes its mission and responsibilities is provided to the
audit staff through an office procedures manual. The manual promotes adherence to the International Professional
Practice Framework developed by the Institute of Internal Auditors.

4.0 Definitions

Abuse
The excessive or improper use of a thing or policy, or employment of something in a manner contrary to the natural
or legal rules for its use. Abuse includes the destruction, diversion, manipulation, misapplication, mistreatment, or
misuse of university resources, as well as the extravagant or excessive use of one’s position or authority. Abuse can occur in financial or nonfinancial settings.

**Advisory Services**
Advisory and related client service activities, the nature and scope of which are agreed with the client, are intended to add value and improve an organization’s governance, risk management, and control processes without the internal auditor assuming management responsibility.

**Assurance**
An objective examination of evidence for the purpose of providing an independent assessment on governance, risk management, and control processes for the organization. Examples may include financial, performance, compliance, system security, and due diligence engagements.

**Charter**
The charter is a formal document that defines OARC’s purpose, authority, and responsibility. The charter establishes the office’s position within the organization; authorizes access to records, personnel, and physical properties relevant to the performance of engagements; and defines the scope of internal audit activities.

**Code of Ethics**
The Code of Ethics of The Institute of Internal Auditors are principles relevant to the profession and practice of internal auditing, and rules of conduct that describe behavior expected of internal auditors. The purpose of the Code of Ethics is to promote an ethical culture in the global profession of internal auditing.

**Compliance**
Adherence to policies, plans, procedures, laws, regulations, contracts, or other requirements.

**Conflict of Interest**
Any relationship that is, or appears to be, not in the best interest of the organization. A conflict of interest could prejudice an individual’s ability to perform his or her duties and responsibilities objectively.

**Control**
Any action taken by management, the board, and other parties to manage risk and increase the likelihood that established objectives and goals will be achieved. Management plans, organizes, and directs the performance of sufficient actions to provide reasonable assurance that objectives and goals will be achieved.

**Control Environment**
The attitude and actions of the board and management regarding the importance of control within the organization. The control environment provides the discipline and structure for the achievement of the primary objectives of the system of internal control (e.g. integrity and ethical values; management’s philosophy and operating style; organizational structure; and the assignment of authority and responsibility).

**Control Processes**
The policies, procedures (both manual and automated), and activities that are part of a control framework, designed and operated to ensure that risks are contained within the level that an organization is willing to accept.
Executive Director of Audit, Risk, and Compliance
The individual who serves as the chief audit executive and is responsible for effectively managing the internal audit activity in accordance with the internal audit charter and the Institute of Internal Auditors’ International Professional Practices Framework.

Engagement
A specific assignment, task, or review activity, such as an internal audit, control self-assessment review, fraud examination, or consultancy. An engagement may include multiple tasks or activities designed to accomplish a specific set of related objectives.

Enterprise Risk Management
A process applied in strategy-setting and across the enterprise that is designed to identify potential events that may affect the entity, manage risk to be within the entity’s risk tolerance, and support the achievement of entity objectives.

Fraud
The intentional misrepresentation or concealment of information in order to deceive, mislead, or acquires something of value. Fraud is an intentional deception perpetrated to secure an unfair advantage or personal benefit.

Governance
The combination of processes and structures implemented by the board to inform, direct, manage, and monitor the activities of the organization toward the achievement of its objectives. The governance process includes: promoting appropriate ethics and values within the organization; ensuring effective organizational performance management and accountability; communicating risk and control information to appropriate areas of the organization; and coordinating the activities of and communicating information among the board, external and internal auditors, and management.

Independence
The freedom from conditions that threaten the ability of a function to carry out its responsibilities in an unbiased manner.

International Professional Practices Framework
The conceptual framework that organizes the authoritative guidance promulgated by the Institute of Internal Auditors. Authoritative guidance is comprised of two categories including mandatory guidance (Core Principles, Definition of Internal Auditing, Code of Ethics, and International Standards for the Professional Practice of Internal Auditing) and strongly recommended guidance (implementation and supplemental guidance).

Objectivity
An unbiased mental attitude that allows internal auditors to make a balanced assessment of all the relevant circumstances and are not unduly influenced by their own interests or by others in forming judgments. Objectivity requires that internal auditors do not subordinate their judgment on audit matters to others.

Risk
The possibility of an event occurring that will have an impact on the achievement of objectives. Risk is measured in terms of impact, likelihood, and velocity.
Risk Management
A process to identify, assess, manage, and control potential events or situations to provide reasonable assurance regarding the achievement of the organization’s objectives.

Scope
A statement that specifies the focus, extent, and boundary of a particular audit. The scope can be specified by defining the physical location of the audit, the organizational units that will be examined, the processes and activities that will be included, and/or the time period that will be covered.

Significance
The relative importance of a matter within the context in which it is being considered, including quantitative and qualitative factors, such as magnitude, nature, effect, relevance, and impact. Professional judgment assists internal auditors when evaluating the significance of matters within the context of the relevant objectives.

Waste
The careless expenditure, consumption, mismanagement, use, or squandering of university resources. Waste also includes incurring unnecessary costs due to inefficient or ineffective practices, systems, or controls.

5.0 References


The Institute of Internal Auditors’ International Professional Practices Framework, including the Core Principles for the Professional Practice of Internal Auditing, the Code of Ethics, the International Standards for the Professional Practice of Internal Auditing (Standards), and the Definition of Internal Auditing, revised in 2016 and effective 2017.

6.0 Approval and Revisions

- Revision 0
  Approved February 9, 1989, by the Director of Internal Audit, David C. Goodyear.

- Revision 1
  Annual review. Section 2.8 - changed so that reports "approved" by the Finance and Audit Committee of the Board of Visitors shall be available to the public.
  Approved March 29, 1990, by the Director of Internal Audit, David C. Goodyear.

- Revision 2
  Changes were made to eliminate minor discrepancies between the audit manual and the policy statement as presented to the Board of Visitors.
  Approved November 3, 1995, by the Director of Internal Audit, David C. Goodyear.
  Annual review, November 5, 1998, by Office of the Executive Vice President. No revisions.
- Revision 3
  Policy updated to reflect review by the Finance and Audit Committee of the Board of Visitors. Policy serves as a charter for the Internal Audit Department.
  Approved March 29, 2004 by the Executive Vice President and Chief Operating Officer, Minnis E. Ridenour.
  Approved March 29, 2004 by the Finance and Audit Committee of the Board of Visitors.

- Revision 4
  Policy updated to reflect review by the Finance and Audit Committee of the Board of Visitors, in conjunction with the Internal Audit Department’s quality assurance review.
  Approved March 14, 2005 by the Executive Vice President and Chief Operating Officer, James A. Hyatt.
  Approved March 14, 2005 by the Finance and Audit Committee of the Board of Visitors.

- Revision 5 April 1, 2008:
  Updates to position titles and/or responsibilities due to university reorganization.

- Revision 6
  - Policy title changed from “Internal Audit Department” to “Internal Audit Charter.”
  - Section 2.2 revised to reflect change in Director of Internal Audit reporting relationship.
  - Sections 2.5 and 2.7 revised to clarify the role of Internal Audit and the standards under which it conducts its activities.
  - Section 2.9 revised to clarify the process for senior management areas submitting corrective action plans.
  Approved November 7, 2011 by the university President, Charles W. Steger.
  Approved November 7, 2011 by the Finance and Audit Committee of the Board of Visitors.

- Revision 7
  - Full technical review correcting grammatical, punctuation, word usage, sentence structure, and minor content and/or format inconsistencies. The charter was also revised to incorporate the concept of objectivity, and to include applicable procedures and definitions.
  - Policy title changed from “Internal Audit Charter” to “Charter for the University’s Internal Audit Function.”
  Approved November 9, 2015 by the Finance and Audit Committee of the Board of Visitors and President, Timothy D. Sands.

- Revision 8
  Revised to address the reorganization of the Board of Visitors’ committee structure and additional responsibilities with regard to risk management and compliance. Additional revisions were made to reflect revised guidance from the Institute of Internal Auditors.
  Approved November 5, 2017 by the Compliance, Audit, and Risk Committee of the Board of Visitors and President, Timothy D. Sands.

- Revision 9
  Revisions from technical review correcting grammatical, punctuation, word usage, sentence structure, and minor content and/or format inconsistencies.
Approved November 18, 2019 by the Compliance, Audit, and Risk Committee of the Board of Visitors and President, Timothy D. Sands.

- Revision 10
  Revisions from technical review correcting grammatical, punctuation, and minor format inconsistencies. Additionally, section 2.9 was revised to clarify expectations on OARC’s responsibility for coordinating external audits and reviews.

Approved November 15, 2020 by the Compliance, Audit, and Risk Committee of the Board of Visitors and President, Timothy D. Sands.
The Committee will receive an update on the status of the Auditor of Public Accounts financial statement audit and Management Letter for the fiscal year ended June 30, 2021.
Background

Virginia Tech is subject to reviews by a variety of Commonwealth agencies, including the Auditor of Public Accounts (APA), the Office of the State Inspector General (OSIG), and others. In addition to the annual audits of the university’s financial statements and its Intercollegiate Athletics program conducted by the APA, Virginia Tech has been included along with other agencies in statewide reviews typically included as part of an agency’s annual work plan. Due to the breadth of the programs and the dollar volume of activities at Virginia Tech, the university is often selected for inclusion in a variety of statewide reviews. The following report provides an analysis of statewide audit activities consistent with the university’s planned approach to manage and report on these audit activities.

Review of Chapters 759/769 Bond Issuance Limit (APA, September 2018)

To satisfy the requirements in Chapters 759/769 of the 2016 Acts of Assembly, Items 10 and 11, the APA determines how the Six-Year Capital Outlay Plan Advisory Committee is monitoring the $300 million annually debt limit for capital projects and whether the Commonwealth stayed within the limits. Additionally, the APA determined if the Departments of Planning and Budget and General Services were complying to the legislation, and issued quarterly reports related to the status of the General Assembly building to members of the Senate Finance Committee and House Appropriations Committee. The APA concluded the advisory committee is properly monitoring these requirements and that they are being met.

Virginia Department of Veterans Services (2019)

Virginia Tech received notice of its selection in a Compliance Survey, which was conducted to ensure that schools, training establishments, and their approved courses are in compliance with all applicable provisions of the laws administered by the U.S. Department of Veterans Affairs and State Approving Agency (DVS). This limited scope review was to monitor compliance based on a review of records for a specific set of students.

Report on Compliance – NCAA Subsidy Percentage Requirements (APA, September 2020)

The APA prepared a summary by reviewing a Schedule of Revenues and Expenses for Intercollegiate Athletics Programs at each institution for the fiscal year ended June 30, 2019. The APA performed calculations in accordance with the provisions of § 23.1-1309. The subsidy percentage shall not exceed 20 percent for Virginia Tech, and the review found the university was in compliance with this threshold.

Each fiscal year, any percentage increase in the subsidy at an institution shall be matched by a like percentage increase in generated revenue, except that each such institution shall utilize a rolling average of the change in generated revenue and student fees over the immediately preceding five years for the purposes of such calculation. Fiscal year 2019 is the third reporting
Increases in student fee revenue may result from several factors, including changes in the per student allocation of an institution’s mandatory non-educational and general (E&G) fee and fluctuations in an institution’s enrollment. For several institutions, including Virginia Tech, significant increases in enrollment resulted in larger increases to student fee revenue allocated to the institution’s respective athletics departments without substantial increases in fees assessed to students. It was noted that Virginia Tech allocates the lowest portion of their mandatory non-E&G fee, in both dollars and on a percentage basis, to Athletics when compared to other public four-year institutions in Virginia.

The report noted as the COVID-19 pandemic continues to disrupt normal athletic department activities, the APA expects that many institutions may not be compliant with subsection C and/or subsection D of § 23.1-1309 of the Code of Virginia by the end of fiscal year 2021 without specific legislative relief.

**Report on the Audit of the Statement of Expenditures** (APA, November 2020)

The APA audited the statement of expenditures on grant number 2000001678 with the International Fund for Agricultural Development (schedule) for reporting period January 8, 2018 to December 31, 2019. The APA found the accompanying schedule presented fairly, in all material respects, the expenditures and revenues associated with the grant are in accordance with the financial reporting provisions of the grant agreement.

**Internal Revenue Service** (Spring 2021)

The university is undergoing an IRS audit on 403(b) deferred compensation plans for tax year 2018 and work is in progress.

**Financial Audit of Costs Catalyzing Afghan Agricultural Innovation Program**
(U. S. Agency for International Development (USAID), 2021)

The USAID contracted with the independent certified public accounting firm of CliftonLarsonAllen LLP (CLA) to conduct an audit of Cooperative Agreement No. 306-72030618LA00002 for the period May 28, 2018 to December 31, 2019. The audit objectives for this cooperative agreement include: to opine on USAID fund accountability, evaluate the university’s internal control for this award, and compliance with agreement terms and applicable laws and regulations. The university has received a draft report from the auditors and provided initial responses. Discussions are occurring with the grantor regarding the allowability of working capital advances.

Additionally, the Office of the Special Inspector General for Afghanistan Reconstruction (SIGAR) is performing an audit on the award for the period January 1, 2020 through May 28, 2021. We anticipate that the audit will begin in the fall of 2021 and continue for six months.

**Audit Report on Disclosed Cost Accounting Practices**
(Defense Contract Audit Agency (DCAA), May 2021)

The DCAA examined the cost accounting practices disclosed in the university’s Conformed Disclosure Statement Form Cost Accounting Standards Board Disclosure Statement (CASB DS-2), Rev. 6, certified January 7, 2021, and subsequent Conformed Disclosure Statement Form
CASB DS-2, Rev. 6A, certified April 14, 2021, for compliance with Cost Accounting Standards (CAS) for Educational Institutions and Code of Federal Regulations, Title 2, Part 200 (2 CFR 200). The DCAA opined that the changes made to the DS-2 comply, in all material respects. The Office of Naval Research (ONR), our cognizant agency, also determined the practices described in the university’s DS-2, Revisions 5, 6, and 6A are in compliance with CAS.

**OSIG Clery Act Performance Audit** (2020-2021)

In accordance with the Code of Virginia § 2.2-309 [A](10), OSIG conducts performance audits of executive branch state agencies, including colleges and universities, to ensure state funds are spent as intended and to evaluate the efficiency and effectiveness of programs. All higher education institutions, including Virginia Tech, were originally notified in December 2020 that OSIG will conduct a performance audit of the implementation of the Clery Act during fiscal year 2021. The preliminary scope of the project was calendar years 2015 through 2020, with the preliminary methodology consisting of interviewing key staff members, documenting processes and procedures related to the Clery Act, reviewing any information systems used to track and maintain information, and benchmarking with other states. The expected value of this performance audit would potentially be improving the timeliness and accuracy of reporting and ensuring that higher education institutions are taking actions to address trends identified in the reporting at a sampling of Virginia’s colleges and universities.

Virginia Tech subsequently responded to a detailed survey provided by OSIG. OSIG recently selected three universities (George Mason University, University of Mary Washington, and Virginia State University) and three community colleges (Dabney Lancaster, Virginia Western, and New River) for detailed assessment. Further involvement for Virginia Tech is not anticipated at this time.

**OSIG 2022 Work Plan** (June 2021)

OSIG will monitor quality assurance reviews performed by independent assessors for Virginia Polytechnic Institute and State University as required for compliance with the Institute of Internal Auditors’ International Standards for the Professional Practice of Internal Auditing.

**Capital Construction Project Reviews** (on-going)

The Office of Audit, Risk, and Compliance (OARC) works in close collaboration with the Division of Campus Planning, Infrastructure, and Facilities (CPIF) in outsourced reviews of certain capital construction projects. In general, the contract compliance audits are conducted on Construction Manager at Risk (CMaR) contracts in three phases (preconstruction, construction in progress, contract close out) with a goal of ensuring billings and payments are in accordance with contract documents, reviewing for duplicate costs, appropriateness of change orders, and identifying opportunities for cost avoidance.

In summer 2021, Virginia Tech rebid its long-standing construction project review program and three firms were selected. OARC and CPIF work collaboratively to assign and monitor firm performance on the selected capital construction projects. The following reviews have occurred since September 2019 on the active CMaR projects:
<table>
<thead>
<tr>
<th>Capital Construction Project</th>
<th>Preconstruction</th>
<th>Construction In Progress</th>
<th>Contract Close Out</th>
</tr>
</thead>
<tbody>
<tr>
<td>Holden Hall Renovation</td>
<td>✔</td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>Data and Decision Sciences</td>
<td>✔</td>
<td>In Progress</td>
<td></td>
</tr>
<tr>
<td>Corps Leadership and Military Science</td>
<td>✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Innovation Campus Academic Building</td>
<td>✔</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Upper Quad Residence Hall</td>
<td>✔</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Enabling Informed Decisions

Annual Report
For the Fiscal Year Ended June 30, 2021
# Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>MISSION STATEMENT</td>
<td>3</td>
</tr>
<tr>
<td>STATE OF CONTROL ENVIRONMENT</td>
<td>4</td>
</tr>
<tr>
<td>FY 2020-21 HIGHLIGHTS</td>
<td>5</td>
</tr>
<tr>
<td>INTERNAL AUDIT</td>
<td>6</td>
</tr>
<tr>
<td>FRAUD, WASTE, AND ABUSE</td>
<td>10</td>
</tr>
<tr>
<td>ENTERPRISE RISK MANAGEMENT PROGRAM</td>
<td>11</td>
</tr>
<tr>
<td>INSTITUTIONAL COMPLIANCE PROGRAM</td>
<td>13</td>
</tr>
<tr>
<td>STAFFING AND RESOURCES</td>
<td>14</td>
</tr>
<tr>
<td>APPENDIX A: FY 2020-21 AUDIT PLAN STATUS</td>
<td>17</td>
</tr>
<tr>
<td>APPENDIX B: IIA STANDARDS DISCLOSURES</td>
<td>19</td>
</tr>
</tbody>
</table>
Mission Statement

The Office of Audit, Risk, and Compliance (OARC) performs independent internal audits, plans and oversees the university risk management process, and oversees the institutional compliance program. OARC’s mission is to enhance and protect organizational value by providing risk-based and objective assurance, advice, and insight as follows:

1. **Audit:** Provide independent, objective assurance and advisory activity designed to add value and improve university operations. Audits help the university accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control, and governance processes.

2. **Enterprise Risk Management:** Provide oversight of the enterprise risk management program by creating and maintaining the framework to effectively identify, assess, and manage risk.

3. **Compliance:** Provide oversight of the institutional compliance program and the distributed processes that support compliance across the university.

**Protected & Connected**

OARC protects the university by independently and objectively identifying business risks and connects with key leaders and stakeholders to evaluate risk-mitigation strategies.
State of Control Environment

OARC’s internal audit function continues to be a significant element of the university’s overall control structure and a positive influence on the control environment. During fiscal year 2020-21, OARC examined and tested the operations and systems of internal control within a number of university departments to assist management and the Board of Visitors in the discharge of their fiduciary responsibilities.

As a result of the audit, advisory, and investigative work performed during fiscal year 2020-21, deficiencies representing significant control weaknesses were identified related to information technology security; as well as, a number of other areas requiring improvement were identified. The scope of audit work was not limited in any way by management or others, nor were there any instances where OARC considered its independence or objectivity to have been impaired. Management and others were found to be conscientious, cognizant, and accepting of their responsibility for internal control, as well as open, cooperative, and supportive of audit efforts.

Management has generally accepted audit issues and responded by developing action plans to address the concerns noted. These statements are made with the understanding that no system of internal control provides absolute assurance that controls are functioning effectively. These statements are also not meant to imply that fraud and other irregularities do not exist or, if they do exist, are certain to be detected. Decisions as to the level of risk that is tolerable and should be accepted by the university are the responsibility of management. That said, based on the audit, advisory, and investigative work performed, OARC did not identify any areas where management decided to accept a level of risk that we believed to be unacceptable.
FY 2020-21 Highlights

Internal Audit
- 65% of audit plan completed
- 17 completed engagements
- 19 fraud, waste, or abuse cases initiated
- 4.8 out of 5 (92%) on client satisfaction surveys
- 60 management action plans were closed

Enterprise Risk Management (ERM)
- Update of university’s enterprise risk landscape and heat map
- Refresh of the “top ten” focus areas
- Increased ERM engagement at all Board of Visitor committees

Institutional Compliance Program (ICP)
- 75+ distributed university-wide risk owners completed 160+ compliance risk assessments
- Ongoing management of the anonymous compliance concern reporting hotline

92% client satisfaction
Whole-of-leadership engagement
98% risk assessments completed
Internal Audit

Internal Audit continued its role as the assurance and advisory arm within the university. Value-added engagements through traditional audits, a limited number of advisory activities, and providing insight through formal and informal means were hallmarks throughout the year. As depicted below, fiscal year 2020-21 began with 28 proposed engagements. A combination of changing risks, including the continued effects of COVID-19, led to the cancelation or deferment of seven audits. Coupled with two supplemental advisory reviews and three carry forward engagements, we ended the year with 26 planned audits, of which we completed 17 as of the end of the fiscal year. This results in a 65% completion rate for fiscal year 2021. Appendix A shows the status of each audit in the fiscal year 2020-21 audit plan.

<table>
<thead>
<tr>
<th>Audits</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total # of Audits Planned</td>
<td>28</td>
</tr>
<tr>
<td>Total # of Supplemental Audits</td>
<td>2</td>
</tr>
<tr>
<td>Total # of Carry Forwards</td>
<td>3</td>
</tr>
<tr>
<td>Total # of Planned Audits Deferred and/or Canceled</td>
<td>7</td>
</tr>
<tr>
<td><strong>Total Audits in Plan as Amended</strong></td>
<td><strong>26</strong></td>
</tr>
<tr>
<td><strong>Total Audits Completed</strong></td>
<td><strong>17</strong></td>
</tr>
<tr>
<td>Audits – Percentage Complete</td>
<td>65%</td>
</tr>
<tr>
<td>Audits – Percentage Complete or Underway</td>
<td>100%</td>
</tr>
<tr>
<td><strong>Note:</strong> Includes Policy Compliance Reviews and Advisory Services</td>
<td></td>
</tr>
</tbody>
</table>

The 65 percent completion rate is far below the 85 percent goal. OARC management conducted a thorough review of last year’s results to identify root causes of the missed completion rate. We believe contributing factors include:

- Challenges of employees learning how to execute engagements in the hybrid working environment.
- Difficulties encountered with auditees working offsite.
- A metered approach that recognized the ongoing operational challenges within the institution.
Effort

Of the 24,200 hours logged by OARC last year, 65% was charged directly to executing our core mission. The remaining 35% was spent on office administration, computer support, training, and compensated absences.

This chart depicts how 15,700 of core-mission hours were spent.
- 60% on Risk, Advisory, and Compliance engagements.
- 19% on fraud, waste, and abuse investigations.
- 4% on ERM and compliance.
- 17% on audit support (annual audit planning, supervision).

Follow Up Activities and Management Corrective Actions

OARC conducts follow-up on management’s implementation of agreed upon improvements for previously issued audit recommendations. Each audit recommendation is given a rating of high, medium, or low priority. This judgment is made in a local context, and items identified as high do not necessarily convey material deficiencies or risks beyond the operating environment in which they were found. The Board of Visitors’ Compliance, Audit, and Risk (CAR) Committee receives the high and medium priority recommendations and associated management corrective actions. However, OARC and management closely monitor all outstanding recommendations to ensure they are adequately addressed by the responsible parties.

Of the 52 management corrective actions generated during fiscal year 2020-21 engagements, OARC categorized eight as high priority (15%). High-priority management corrective actions include those that are systemic or have a broad impact; have contributed to a significant investigation finding; are reportable conditions under professional literature; create health or safety concerns; involve senior officials; create exposures to fines, penalties, or refunds; or are otherwise judged as significant control issues. Open management corrective action plans at fiscal year-end have been outstanding an average of 322 days. Audits for fiscal year 2020-21 resulted in recommendations with ratings of high, medium, or low management corrective actions as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning # of management corrective actions</td>
<td>56</td>
</tr>
<tr>
<td>Management corrective actions added</td>
<td>52</td>
</tr>
<tr>
<td>Management corrective actions closed</td>
<td>60</td>
</tr>
<tr>
<td>Current # of open management corrective actions</td>
<td>48</td>
</tr>
</tbody>
</table>
Results of Surveys for Evaluating OARC Services

After the completion of each engagement, the primary contacts within the area under review are provided a survey requesting their evaluation of the quality of the services provided. Feedback from the surveys is used to enhance the overall quality of the engagements and to ensure we are meeting our customer service focus. The survey responses are grouped into three categories:

**Audit Team**  
Demonstrated technical proficiency, approached audit in an objective and professional manner, and provided effective conclusions and opinions.

**Audit Performance**  
Discussed the preliminary audit objectives, scope, and timing of the audit, solicited and considered management concerns and suggestions in the audit, and minimized disruption of auditee’s daily activities as much as possible.

**Audit Report**  
Written clearly, contained adequate explanations for the observations, and recommended improvements or added value to the department’s operation.

**FY 2020-21 Survey Results**

![Survey Results Graph]

Overall, customer ratings were highly favorable with results ranging from good to excellent. Attaining a cumulative average score of 4.6 on a 5-point scale exceeded OARC’s goal of a 4.0 rating on survey feedback, resulting in 92 percent client satisfaction.

“Professional, helpful, and skilled team that identified areas for improvement as well as identified resources to guide our corrective action.”

- Department Business Manager
Quality Assurance and Improvement Program

In accordance with requirements set forth by the Institute of Internal Auditors’ (IIA) International Standards for the Professional Practice of Internal Auditing as shown in Appendix B, OARC maintains a comprehensive Quality Assurance and Improvement Program. This program includes ongoing monitoring, periodic self-assessments, and an independent external assessment that should be conducted at a minimum of every five years.

The on-going monitoring program consists of four elements: the supervisory review of the project working papers, quality assurance reviews of individual audits, the pre-issuance review of reports, and periodic assessments of the quality control system.

An external assessment was last completed during fiscal year 2015-16, when the internal audit function received the highest rating possible of “generally conforms.” The next independent external assessment has been scheduled for the fall of 2021. In anticipation of the external review, a self-assessment was completed in fiscal year 2019-20, during which recommendations to improve internal processes were made and subsequently implemented.
Fraud, Waste, and Abuse

OARC conducts reviews of all state and local Hokie Hotline reports and internal complaints alleging fraud, waste, and abuse. During fiscal year 2020-21 OARC:

- Initiated 19 cases, including 11 internal and 8 state hotline complaints.
- Closed 10 cases from prior fiscal years and 15 for the current fiscal year.

For the 25 cases completed:

- 0 of 10 state hotline cases were substantiated.
- 6 of 15 (40%) internally reported cases were substantiated.

Since fiscal year 2011-12, approximately 56 percent of internally reported allegations have been substantiated, and 18 percent of state hotline cases have historically been substantiated, for a combined weighted average of 39 percent.

OARC maintains a fraud, waste, and abuse hotline service (“Hokie Hotline”) that offers an easy, safe, secure, and anonymous platform to accept tips and complaints from all sources about potential fraud, waste, abuse, and noncompliance at the university. Two of the 11 internally reported complaints mentioned above were received via the Hokie Hotline.

Since fiscal year 2011-12, approximately 72 percent of the allegations investigated by OARC have fallen within five general categories: improper use of university resources; abuse of authority; leave or time abuse; misfeasance and waste; and conflict of interest.
Enterprise Risk Management Program

OARC has coordinated Virginia Tech’s Enterprise Risk Management (ERM) program since its inception at the request of the Board of Visitors CAR Committee in 2017. The ERM process, a key tool in setting strategic goals across the enterprise, is designed to identify potential events that may affect the university, manage those risks within the university’s risk tolerance, and support the achievement of Virginia Tech’s mission and objectives. The ERM program strengthens the university’s ability to achieve its mission and strategic objectives through effective management of key risks and seizure of opportunities related to the achievement of strategic objectives. In this context, risk encompasses both negative events (“downside risk”) and opportunities (“upside risk”).

ERM-related activities that took place in fiscal year 2020-21, both planned and ad hoc, included:

- Deployed an updated risk landscape with a comprehensive evaluation of the “top ten risks.”
- Increased the visibility of ERM across the CAR Committee and other Board of Visitors committees.

We are pleased to see continued engagement with the identified enterprise risks across the Board of Visitors committees and the executive leadership team. On multiple occasions during the past year, executive and senior leadership mentioned how the issues facing the institution were contemplated through the ERM process. Additionally, we are encouraged by the continued broadening of coverage in presentations to the Board of Visitors on ERM risks. Since the formation of the formal ERM program and introduction of the university’s Enterprise Risk Management Program, 20 of 24 enterprise risks discussed with the board.
Landscape, 33 presentations and discussions highlighting ERM risk areas took place across the five standing Board of Visitors committees. The 24 enterprise risks are depicted in the following graphic with the size corresponding to number of discussions.
Institutional Compliance Program

Virginia Tech is committed to integrity, a culture of compliance, and promoting the highest ethical standards for all employees. Since 2017, OARC has led the university’s Institutional Compliance Program (ICP) in promoting and supporting a working environment reflecting our commitment to compliance with all relevant legal and regulatory requirements. The ICP is a resource to support the Virginia Tech community in proactively meeting its compliance obligations and managing compliance risks.

“Virginia Tech is committed to integrity, a culture of compliance, and the promotion of the highest ethical standards for all employees.”

- President Tim Sands

In fiscal year 2020-21, ICP activities included:

- Achieving a 97.5% completion rate (157 of 161) by 78 university-wide risk owners for initial risk assessments and initial analysis of resulting data.
- Managing an anonymous reporting hotline for compliance-related concerns.
- Pivoting focus of the Compliance Advisory Committee to compliance outreach and education.

In order to scale the compliance program to fully support the ever-growing complex regulatory frameworks, a Compliance Officer position was funded after the fiscal year to focus on monitoring compliance efforts university-wide, facilitating discussion amongst compliance owners, and staying current on emerging trends in higher education compliance. Once personnel is onboarded, OARC will begin developing compliance-related tools, such as a dedicated web-based site with training resources, compliance owner connectivity, and reporting functions.

8 ELEMENTS OF AN EFFECTIVE COMPLIANCE PROGRAM

- High-level personnel exercising oversight
- Written policies and procedures
- Training and Education
- Lines of Communication
- Well publicized disciplinary guidelines
- Internal compliance monitoring
- Response to detected offenses
- Perform periodic compliance risk assessments
Staffing and Resources

Staffing continues to be a strategic focus. During the year, we successfully on boarded two new staff auditors, a graduate assistant, and an undergraduate student wage employee. The office is currently recruiting to fill two vacant auditor positions.

OARC Organizational Chart

- Board of Visitors
  Compliance, Audit, and Risk Committee
- President
  Timothy D. Sands
- Executive Director of Audit, Risk, and Compliance
  Sharon M. Kurek, MBA, CPA, CFE
- Operations and Project Manager
  Constance F. Marshall
- Director of Internal Audit
  Justin T. Noble, MBA, CIA
- Audit Manager for Special Projects
  Ryan S. Hamilton, MPL, CFE
- Senior Auditor
  Vacant
- Senior Auditor, Data Analytics
  Trevor D. Hughes, MS, CPA
- Staff Auditor II
  J. Andrew McWhinney, MS
- Staff Auditor II
  Mauro A. Castro Silva
- Graduate Audit Assistant
  Reagan N. Martin
- Undergraduate Audit Assistant
  D. Kai Churchill
Professional Service

OARC continues its longstanding tradition of professional engagement and service. Activities this year included:

- Association of College and University Auditors (ACUA)
  - Sharon M. Kurek served on the Ambassador Committee and Nominating Committee, is a member of the ACUA Faculty program, and was a speaker at AuditCon.
  - Justin T. Noble served on the Ambassador Committee and Nominating Committee, and was a speaker at AuditCon.
  - Trevor D. Hughes was a speaker at Audit Interactive and AuditCon, and volunteered on the data analytic ad-hoc group.

- Institute for Internal Auditors Southwest Virginia Chapter
  - Sharon M. Kurek, Thomas J. Demmer, and Mauro Castro Silva served on the Audit Committee.

Professional Qualifications

We are proud of our staff and the depth of experience in the team. OARC staff has more than 180 years of combined professional experience, including 165 years of combined experience in the audit, risk, and compliance profession. Additionally, staff has over 55 years of service to Virginia Tech. The staff maintains an extensive background with expertise in such areas as:

- Information technology;
- Fraud and forensics;
- Athletics;
- Healthcare;
- Financial aid;
- Research; and
- General financial, compliance, and operational auditing.

Certification and Advanced Degrees

<table>
<thead>
<tr>
<th>Professional Certifications</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4 Certified Public Accountants (CPA)</td>
<td>2 Certified Information Systems Auditor (CISA)</td>
</tr>
<tr>
<td>3 Certified Fraud Examiners (CFE)</td>
<td>1 Certified Government Auditing Professional (CGAP)</td>
</tr>
<tr>
<td>2 Certified Internal Auditor (CIA)</td>
<td>1 Project Management Professional (PMP)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Advanced Degrees</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Master of Business Administration (MBA)</td>
<td>1 Master of Public Administration (MPA)</td>
</tr>
<tr>
<td>1 Master of Architecture (MArch)</td>
<td>4 Master of Science (Business Analytics, Environmental Natural Resources, Sociology)</td>
</tr>
<tr>
<td>1 Master of Policy Leadership (MPL)</td>
<td></td>
</tr>
</tbody>
</table>

165 years of professional audit, risk, and compliance experience
Resourcing
The table below compares OARC’s fiscal year 2020-21 expenditures with fiscal year 2019-20. While over 95% of OARC expenditures supported salaries and benefits, these costs decreased due to vacancies among staff members, which were intentionally held open due to the pandemic-related hiring freeze. Due to travel restrictions and other impacts of the COVID-19 pandemic, training expenses continued to decrease as training remained in virtual modality. Due to the prior year’s decision to engage an external audit firm to complete two planned audit projects, we incurred expenses in that category in fiscal year 2019-20, but the use of consultants was avoided per university guidance in fiscal year 2020-21. Costs continue to remain high for software necessary to carry out OARC responsibilities in an effective and efficient manner, including electronic workpapers, data analysis tools, and the new Hokie Hotline.

<table>
<thead>
<tr>
<th>Analysis of Expenditures</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>FY 2019-20</td>
</tr>
<tr>
<td>Salaries and Benefits</td>
</tr>
<tr>
<td>Equipment</td>
</tr>
<tr>
<td>External Audit Firm Engagement</td>
</tr>
<tr>
<td>Operating Expenses</td>
</tr>
<tr>
<td>Training</td>
</tr>
<tr>
<td>Personnel Expenses &amp; Recruitment</td>
</tr>
<tr>
<td>Audit Software</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>
Appendix A: FY 2020-21 Audit Plan Status

The chart below outlines the status of the fiscal year 2020-21 audit plan, as amended. Nine projects, including two advisory reviews, were carried forward to fiscal year 2021-22 but were completed before the November 2021 BOV meeting.

<table>
<thead>
<tr>
<th>Audit Project</th>
<th>Risk Ranking</th>
<th>BOV Mtg</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Risk-Based Audit</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Americans with Disabilities Act (ADA) Compliance</td>
<td>High</td>
<td>Canceled</td>
</tr>
<tr>
<td>Athletics*</td>
<td>High</td>
<td>Nov 2021</td>
</tr>
<tr>
<td>Computer Science</td>
<td>High</td>
<td>Jun 2021</td>
</tr>
<tr>
<td>Foreign Gift and Contracts Reporting</td>
<td>High</td>
<td>Deferred</td>
</tr>
<tr>
<td>Fralin Life Sciences Institute</td>
<td>High</td>
<td>Nov 2021</td>
</tr>
<tr>
<td>HR: Compensation and Classification</td>
<td>High</td>
<td>Deferred</td>
</tr>
<tr>
<td>IT: Data Privacy</td>
<td>High</td>
<td>Deferred</td>
</tr>
<tr>
<td>IT: External Interfaces and Wire Transfers</td>
<td>High</td>
<td>Nov 2021</td>
</tr>
<tr>
<td>IT: Linux Server Security</td>
<td>High</td>
<td>Jun 2021</td>
</tr>
<tr>
<td>IT: Network Security</td>
<td>High</td>
<td>Deferred</td>
</tr>
<tr>
<td>Principal Investigator Research Management</td>
<td>High</td>
<td>Nov 2021</td>
</tr>
<tr>
<td>Procurement and Accounts Payable</td>
<td>High</td>
<td>Nov 2021</td>
</tr>
<tr>
<td>Research: Biosafety*</td>
<td>High</td>
<td>Nov 2021</td>
</tr>
<tr>
<td>Scholarships*</td>
<td>High</td>
<td>Jun 2021</td>
</tr>
<tr>
<td>Student Engagement and Campus Life</td>
<td>Medium</td>
<td>Mar 2021</td>
</tr>
<tr>
<td>Student Fees</td>
<td>Medium</td>
<td>Nov 2021</td>
</tr>
<tr>
<td>Student-Athlete Academic Success</td>
<td>High</td>
<td>Nov 2021</td>
</tr>
<tr>
<td>Title IX Compliance</td>
<td>High</td>
<td>Deferred</td>
</tr>
<tr>
<td>Veterinary Teaching Hospital</td>
<td>High</td>
<td>Nov 2021</td>
</tr>
<tr>
<td>Equine Medical Center</td>
<td>High</td>
<td>Nov 2021</td>
</tr>
<tr>
<td><strong>Policy Compliance Reviews</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Office of the President</td>
<td></td>
<td>Mar 2021</td>
</tr>
<tr>
<td>Office of the Provost</td>
<td></td>
<td>Jun 2021</td>
</tr>
<tr>
<td>Pamplin College of Business</td>
<td></td>
<td>Mar 2021</td>
</tr>
<tr>
<td>Virginia Tech Carilion School of Medicine</td>
<td></td>
<td>Nov 2021</td>
</tr>
</tbody>
</table>

* Annual Audit on Different Components
Additionally, OARC responded to management’s requests for advisory services and consultative guidance in the following areas:

- **Charlotte County** – The Charlotte County Office of Virginia Cooperative Extension provides education through programs in Agriculture and Natural Resources, Family and Consumer Sciences, 4-H Youth Development, and Community Viability. The objective of this review was to assist management in assessing the office’s funds handling procedures.

- **Construction Project Management** – Effective construction project management is a critical component to achieving the university’s growth plans and requires cooperation and communication across all university stakeholders as well as construction partners. The objective of this review was to assess how the university managed risk associated with the capital construction program.

- **Gift Accounting** – The university’s ambitious goals require the ongoing financial support of its alumni and donors. The objective of this review was to assist management in reviewing gift accounting processes across the various units involved. This project was carried forward as it was not completed during the fiscal year.

- **Honors College** – The mission of the Virginia Tech Honors College is to inspire and facilitate an extraordinary undergraduate education for students of exceptional motivation with a variety of life experiences. The objective of this review was to assess the major processes in the newly established college, including procedures used to establish or integrate new programs.

- **Information Technology Security** – The university maintains a vast IT enterprise to support meeting its mission. In any large research university, the IT risks are complex and ever evolving. At Virginia Tech, the risks are further elevated by the highly decentralized computing environment. The objective of this review was to assess risks and identify opportunities to address noncompliance in Virginia Tech’s distributed computing environment.

- **International Dependencies** – Virginia Tech’s mission is to be a leading global university – one that has a worldwide perspective, empowers graduates to solve world challenges, and is a top destination for global talent and innovation. Among the tremendous benefits, this global viewpoint introduces an element of risk in the form of dependency on international populations, governments, and infrastructure. This review was in follow-up to an Enterprise Risk Management tabletop exercise focused on potential impacts of reduced international student enrollment and will focus on specific and general takeaways regarding the identification of opportunities in this space. This project was initially halted during the COVID pandemic and subsequently canceled.

- **Robotics Process Automation (RPA)** – RPA is a technology that allows a “robot” to emulate and integrate the actions of humans in digital systems to execute business processes. The university has and continues to implement RPA into core financial functions. The objective of this review was to assist management in ensuring sound internal controls remain in the RPA enhanced processes. This project was carried forward as it was not completed during the fiscal year.
## Appendix B: IIA Standards Disclosures

### Per Charter:

The internal audit function will conduct its activities in accordance with the Institute of Internal Auditors’ International Professional Practices Framework including the Core Principles for the Professional Practice of Internal Auditing, Definition of Internal Auditing, Code of Ethics, and International Standards for the Professional Practice of Internal Auditing.

### MANDATORY GUIDANCE

<table>
<thead>
<tr>
<th>Core Principles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demonstrates integrity.</td>
</tr>
<tr>
<td>Demonstrates competence and due professional care.</td>
</tr>
<tr>
<td>Is objective and free from undue influence (independent).</td>
</tr>
<tr>
<td>Aligns with the strategies, objectives, and risks of the organization.</td>
</tr>
<tr>
<td>Is appropriately positioned and adequately resourced.</td>
</tr>
<tr>
<td>Demonstrates quality and continuous improvement.</td>
</tr>
<tr>
<td>Communicates effectively.</td>
</tr>
<tr>
<td>Provides risk-based assurance.</td>
</tr>
<tr>
<td>Is insightful, proactive, and future-focused.</td>
</tr>
<tr>
<td>Promotes organizational improvement.</td>
</tr>
</tbody>
</table>

### Definition of Internal Auditing

Internal auditing is an independent, objective assurance and consulting activity designed to add value and improve an organization’s operations. It helps an organization accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control, and governance processes.

### Code of Ethics

Internal auditors are expected to apply and uphold the following principles:

- **Integrity** – The integrity of internal auditors establishes trust and thus provides the basis for reliance on their judgment.
- **Objectivity** – Internal auditors exhibit the highest level of professional objectivity in gathering, evaluating, and communicating information about the activity or process being examined. Internal auditors make a balanced assessment of all the relevant circumstances and are not unduly influenced by their own interests or by others in forming judgments.
- **Confidentiality** – Internal auditors respect the value and ownership of information they receive and do not disclose information without appropriate authority unless there is a legal or professional obligation to do so.
- **Competency** – Internal auditors apply the knowledge, skills, and experience needed in the performance of internal audit services.

### International Standards for the Professional Practice of Internal Auditing

<table>
<thead>
<tr>
<th>Attribute Standards (1000 through 1300)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000 Purpose, Authority, and Responsibility</td>
</tr>
<tr>
<td>1100 Independence and Objectivity</td>
</tr>
<tr>
<td>1200 Proficiency and Due Professional Care</td>
</tr>
<tr>
<td>1300 Quality Assurance and Improvement Program</td>
</tr>
</tbody>
</table>

### Performance Standards (2000 through 2800)

<table>
<thead>
<tr>
<th>Performance Standards (2000 through 2800)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000 Managing the Internal Audit Activity</td>
</tr>
<tr>
<td>2100 Nature of Work</td>
</tr>
<tr>
<td>2200 Engagement Planning</td>
</tr>
<tr>
<td>2300 Performing the Engagement</td>
</tr>
<tr>
<td>2400 Communicating Results</td>
</tr>
<tr>
<td>2500 Monitoring Progress</td>
</tr>
<tr>
<td>2800 Communicating the Acceptance of Risks</td>
</tr>
</tbody>
</table>
The chief audit executive’s reporting and communication to senior management and the board must include information about:

- The audit charter, including internal audit activity’s purpose, authority, and responsibility.
- Independence of the internal audit activity.
- The audit plan and progress against the plan.
- Resource requirements.
- Results of audit activities.
- Conformance with the Code of Ethics and the Standards, and action plans to address any significant conformance issues (Quality Assurance & Improvement Program).
- Management’s response to risk that, in the chief audit executive’s judgment, may be unacceptable to the organization.
The Office of Audit, Risk, and Compliance (OARC) performs independent internal audits, plans and oversees the university risk management process, and oversees the institutional compliance program. OARC’s mission is to enhance and protect organizational value by providing risk-based and objective assurance, advice, and insight as follows:

- **Audit:** Provide independent, objective assurance and advisory activity designed to add value and improve university operations. Audits help the university accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control, and governance processes.

- **Enterprise Risk Management:** Provide oversight of the enterprise risk management program by creating and maintaining the framework to effectively identify, assess, and manage risk.

- **Compliance:** Provide oversight of the institutional compliance program and the distributed processes that support compliance across the university.
OARC did not identify areas where management decided to accept a level of risk that we believed to be unacceptable.

Deficiencies representing significant control weaknesses were identified related to information technology security, as well as, a number of other areas requiring improvement.

Overall, management:

- accepts their responsibility for internal control and is supportive of audit efforts;
- generally accepts audit recommendations and responds by developing action plans to address concerns; and
- did not limit the work performed and independence/objectivity was not impaired.
FY 2020-21 HIGHLIGHTS

Internal Audit:
- 65% of audit plan completed
- 17 completed engagements
- 19 fraud, waste, or abuse cases initiated
- 4.6 out of 5 (92%) on client satisfaction surveys
- 95% on-time completion of high and medium action plans

Enterprises Risk Management
- Updated university’s enterprise risk landscape and heat map.
- Refreshed the "top ten" focus areas.
- Increased ERM engagement at all Board of Visitor committees.

Institutional Compliance Program:
- 75+ distributed university-wide risk owners completed 160+ compliance risk assessments.
- 98% of compliance risk assessments completed.
- Ongoing management of the anonymous compliance concern reporting hotline.

92% client satisfaction
ERM “top ten” updated
98% compliance risk assessments completed

Attachment D


**FY 2020-21 Audit Plan Metrics**

### Audit Plan Status

<table>
<thead>
<tr>
<th>Audits</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total # of Audits Planned</td>
<td>28</td>
</tr>
<tr>
<td>Total # of Supplemental Audits</td>
<td>2</td>
</tr>
<tr>
<td>Total # of Carry Forwards</td>
<td>3</td>
</tr>
<tr>
<td>Total # of Planned Audits Deferred and/or Canceled</td>
<td>7</td>
</tr>
<tr>
<td><strong>Total Audits in Plan as Amended</strong></td>
<td><strong>26</strong></td>
</tr>
</tbody>
</table>

### Total Audits Completed

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Audits Completed</td>
<td>17</td>
</tr>
<tr>
<td>Audits – Percentage Complete</td>
<td>65%</td>
</tr>
<tr>
<td>Audits – Percentage Complete or Underway</td>
<td>100%</td>
</tr>
</tbody>
</table>

Note: Includes Policy Compliance Reviews and Advisory Services

### Distribution of Direct Audit Hours

- Advisory Services: 4%
- ERM & ICP: 4%
- Compliance: 13%
- Risk: 43%
- Audit Support: 17%
- Fraud, Waste, and Abuse: 19%
- Other: 13%

### Client Satisfaction Survey Results

<table>
<thead>
<tr>
<th>Category</th>
<th>FY 2021</th>
<th>FY 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audit Team</td>
<td>4.7</td>
<td>4.5</td>
</tr>
<tr>
<td>Audit Performance</td>
<td>4.6</td>
<td>4.6</td>
</tr>
<tr>
<td>Audit Report</td>
<td>4.6</td>
<td>4.6</td>
</tr>
</tbody>
</table>

### Management Corrective Action Summary

<table>
<thead>
<tr>
<th>Category</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning # of management corrective actions</td>
<td>56</td>
</tr>
<tr>
<td>Management corrective actions added</td>
<td>52</td>
</tr>
<tr>
<td>Management corrective actions closed</td>
<td>60</td>
</tr>
<tr>
<td>Current # of open management corrective actions</td>
<td>48</td>
</tr>
</tbody>
</table>
FRAUD, WASTE, AND ABUSE

Attachment D
continued broadening of coverage in presentations to the Board of Visitors on ERM risks

updated risk landscape including evaluation of the ‘top ten risks’
INSTITUTIONAL COMPLIANCE PROGRAM

Highlights include:

• Achieving a 97.5% completion rate (157 of 161) by 78 university-wide risk owners for initial risk assessments

• Managing an anonymous reporting hotline for compliance-related concerns

• Pivoting focus of the Compliance Advisory Committee to compliance outreach and education

• Compliance Officer position was funded for FY 2022

“Virginia Tech is committed to integrity, a culture of compliance, and the promotion of the highest ethical standards for all employees.”

- President Tim Sands

8 ELEMENTS OF AN EFFECTIVE COMPLIANCE PROGRAM

- High-level personnel exercising oversight
- Written policies and procedures
- Training and Education
- Lines of Communication
- Well publicized disciplinary guidelines
- Internal compliance monitoring
- Response to detected offenses
- Perform periodic compliance risk assessments
## Analysis of Expenditures

<table>
<thead>
<tr>
<th>Category</th>
<th>FY 2019-20</th>
<th>FY 2020-21</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salaries and Benefits</td>
<td>$1,782,251</td>
<td>$1,730,542</td>
</tr>
<tr>
<td>Equipment</td>
<td>5,135</td>
<td>2,997</td>
</tr>
<tr>
<td>External Audit Firm Engagement</td>
<td>74,174</td>
<td></td>
</tr>
<tr>
<td>Operating Expenses</td>
<td>40,940</td>
<td>35,461</td>
</tr>
<tr>
<td>Training</td>
<td>22,379</td>
<td>14,695</td>
</tr>
<tr>
<td>Personnel Expenses &amp; Recruitment</td>
<td>22,769</td>
<td></td>
</tr>
<tr>
<td>Audit Software</td>
<td>33,643</td>
<td>31,167</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$1,981,282</strong></td>
<td><strong>$1,814,862</strong></td>
</tr>
</tbody>
</table>
QUESTIONS?
Background

This report provides a summary of audit ratings issued this period and the full rating system definitions. The following reviews have been completed during this reporting period. The Office of Audit, Risk, and Compliance has made a concerted effort to ensure progress on the annual audit plan.

<table>
<thead>
<tr>
<th>Consent Agenda Reports</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Athletics</td>
<td>Improvements are Recommended</td>
</tr>
<tr>
<td>Fralin Life Sciences Institute</td>
<td>Improvements are Recommended</td>
</tr>
<tr>
<td>IT: External Interfaces and Wire Transfers</td>
<td>Effective</td>
</tr>
<tr>
<td>Principal Investigator Research Management</td>
<td>Improvements are Recommended</td>
</tr>
<tr>
<td>Procurement and Accounts Payable</td>
<td>Effective</td>
</tr>
<tr>
<td>Research: Biosafety</td>
<td>Improvements are Recommended</td>
</tr>
<tr>
<td>Student Fees</td>
<td>Effective</td>
</tr>
<tr>
<td>Virginia Tech Carilion School of Medicine Policy Compliance Review</td>
<td>Improvements are Recommended</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Report for Discussion</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equine Medical Center</td>
<td>Significant Improvements are Needed</td>
</tr>
<tr>
<td>Veterinary Teaching Hospital</td>
<td>Improvements are Recommended</td>
</tr>
</tbody>
</table>
Summary of Audit Ratings

The Office of Audit, Risk, and Compliance’s rating system has four tiers from which to assess the controls designed by management to reduce exposures to risk in the area being audited. The auditor can use professional judgment in constructing the exact wording of the assessment in order to capture varying degrees of deficiency or significance.

Definitions of each assessment option

Effective – The audit identified opportunities for improvement in the internal control structure, but business risks are adequately controlled in most cases.

Improvements are Recommended – The audit identified occasional or isolated business risks that were not adequately or consistently controlled.

Significant or Immediate Improvements are Needed – The audit identified several control weaknesses that have caused, or are likely to cause, material errors, omissions, or irregularities to go undetected. The weaknesses are of such magnitude that senior management should undertake immediate corrective actions to mitigate the associated business risk and possible damages to the organization.

Unreliable – The audit identified numerous significant business risks for which management has not designed or consistently applied controls prior to the audit. Persistent and pervasive control weaknesses have caused or could cause significant errors, omissions, or irregularities to go undetected. The weaknesses are of such magnitude that senior management must undertake immediate corrective actions to bring the situation under control and avoid (additional) damages to the organization.

RECOMMENDATION:

That the internal audit reports listed above be accepted by the Compliance, Audit, and Risk Committee.

November 7, 2021
Virginia Tech

Audit No. 21-1540b: Equine Medical Center

Audit Report
June 30, 2021
# Table of Contents

**Executive Summary**
- Assessment ......................................................................................... 2
- Summary of Issues and Action Plans .................................................. 2

**Engagement Overview**
- Background .......................................................................................... 4
- Risk Exposure ......................................................................................... 4
- Audit Objectives ..................................................................................... 4
- Scope ...................................................................................................... 5
- Criteria .................................................................................................. 5

**Issues and Recommendations**
- I. Dispensary Inventory ......................................................................... 6
- II. Delinquent Accounts .......................................................................... 8
- III. Compliance with Financial Policies ............................................... 10
- IV. Supplies Inventory ........................................................................... 11

**Personnel Involved with Audit**
- Audit Team Information ........................................................................ 13
- Management Contacts ........................................................................... 13
- Contact Information ............................................................................... 13
- Distribution List ..................................................................................... 13
Executive Summary

Assessment

Our audit indicated certain significant business risks for which the Equine Medical Center (EMC) has not implemented effective controls. **Significant improvements are needed** to achieve an adequate system of internal controls and effectively manage the associated business risks. Audit recommendations were issued to management where opportunities for further improvements were noted related to dispensary inventory, delinquent accounts, compliance with financial policies, and supplies inventory. A low-priority recommendation of a less significant nature was noted regarding invoice adjustments.

Summary of Issues and Action Plans

The following observations were noted during our review, and recommendations were issued to address the related business risks:

- **EMC dispensary inventory is not adequately tracked.** Of the eight medications reviewed, four (50%) did not reconcile to the available quantities listed in ezyVet, which is the master inventory management system. Additionally, ezyVet is not setup to track medications by lot number and expiration date, increasing the risk that expired medications go undetected. During the physical inventory count, an expired medication was found. **EMC will take steps to improve the dispensary inventory management process by implementing quarterly inventory audits, documenting its process for tracking medication lot numbers and expiration dates, implementing a monthly check of expiration dates for items in the lockbox outside of the dispensary, training additional personnel in dispensary operations, and evaluating controlled substance discrepancies to determine if notification to the Drug Enforcement Administration is necessary.**

- **EMC delinquent accounts are not appropriately monitored.** Of the 15 client accounts reviewed, 12 (80%) did not include appropriate late fees and/or finance charges, were provided new services without making advance payment, and/or were not consistently referred to the Office of the University Bursar (OUB) once delinquent (i.e., 91 days past due). **EMC will take steps to improve the accounts receivable monitoring process by documenting the process for assessing finance charges and late fees, reminding personnel of the EMC policy requiring clients with past due accounts to make advance payment for new services, and documenting its monthly review of the aged receivables report to ensure delinquent accounts are sent to OUB. Additionally, EMC will continue to explore options for automating the finance charge and late fee assessment process.**

- **EMC did not comply with its financial policies regarding provision of estimates and collection of deposits/payments.** EMC has updated its
policies to reflect its current operating procedure of only requesting, not requiring, deposits and payments at time of service. However, failure to secure deposits and payments increases the overall accounts receivable balance, which totaled $653,000 as of January 31, 2021, and increases the risk of delinquent accounts. Further, the consistent provision of estimates to customers is necessary to ensure that customers can assess their financial ability to pursue treatment.

EMC will coordinate with college management and OUB to review changes made to its financial policies and determine whether the changes are appropriate and provide the most advantageous financial practice. EMC will continue to remind personnel of the importance of providing estimates to clients. Additionally, the EMC management team will develop ezyVet sales templates to assist faculty in giving accurate estimates and will conduct a daily review of hospitalized patients to ensure an estimate has been given and recorded in ezyVet.

EMC supplies inventory is not adequately tracked. Of the 12 items reviewed, five (42%) did not reconcile to ezyVet. In addition, the ezyVet inventory report included multiple items with negative or zero quantities available. Failure to accurately track supplies increases the risk of theft and/or loss. Further, there is no assurance that clients are being charged appropriately for all supplies.

EMC will take steps to improve the supplies inventory management process by conducting a full inventory audit of supplies and reconciling items to CUBEX and ezyVet, implementing quarterly inventory audits, and developing and documenting a methodology to determine which supply items need to be inventory controlled.

EMC has developed management action plans that effectively address the issues in the report, and the proposed timeline of implementing all action plans by January 31, 2022 is reasonable.
Engagement Overview

Background
The Marion duPont Scott Equine Medical Center (EMC) in Leesburg, VA, is one of four campuses comprising the Virginia-Maryland Regional College of Veterinary Medicine (CVM). EMC is fully integrated with the missions of the CVM. Their constituents are those with an interest in horses: students, veterinarians, horse owners, and horse professionals. Their faculty and staff strive to provide:

- Pre-eminent equine health care services for the region;
- Exemplary educational experiences for all of EMC’s students; and
- New knowledge for the well-being of the horse and for the economic benefit of the equine industry.

Opened in 1984, EMC is a referral hospital for equine patients. EMC’s staff of healthcare professionals includes board certified veterinarians in anesthesia, internal medicine, and surgery; veterinarians in residency and internship training programs; and certified veterinary technicians. Veterinary services are provided on an outpatient basis by appointment. Critical care and emergency services are available 24 hours a day, every day of the year. Noteworthy is the fact that EMC has a unique business model. While it receives a modicum of state support and additional educational and general fund support from the CVM in combination with private gifts, its business model relies on the bulk of budget support from client revenues, most of which are restricted to income from referrals.

In January 2020, EMC implemented a new practice management system, ezyVet. This cloud-based software is designed to manage scheduling, clinical records, client communication, business transactions, and inventory.

Risk Exposure
The Office of Audit, Risk, and Compliance periodically performs a detailed risk assessment of the university’s auditable entities using factors such as the amount of cash inflows, operating expenditures, research activities, management of sensitive information, and level of external regulation. The goal of the risk assessment is to prioritize those entities within the university that should receive audit attention. EMC was determined to be a high-risk entity due to its dispensary operations, services provided to outside clients, and the high volume of decentralized funds handling activities.

Audit Objectives
In planning the engagement, the audit staff met with CVM and EMC senior managers and directors to identify business goals and objectives, potential risks, processes to mitigate those risks, and potential audit objectives. The Auditor-in-Charge performed a risk assessment of the information obtained to evaluate the adequacy and effectiveness of the processes in place, identify areas of high risk, and establish audit objectives. Audit objectives were identified as follows:

- To determine whether dispensary inventory is adequately safeguarded and tracked.
To determine whether delinquent accounts are appropriately monitored and whether collection efforts are made.
To determine whether client invoices are accurate, complete, and timely.
To determine whether funds are adequately safeguarded.
To determine whether supplies inventory is adequately safeguarded and tracked.

Scope
To accomplish our objectives, we obtained an understanding of departmental procedures by interviewing key personnel, observing operating processes, evaluating the adequacy of existing policies and procedures, assessing the adequacy of internal controls, evaluating compliance with established policies and procedures, and performing other audit procedures as considered necessary. The audit covered the period of February 1, 2020 to January 31, 2021.

Criteria
This independent and objective review was conducted in conformance with the International Standards for the Professional Practice of Internal Auditing promulgated by the Institute of Internal Auditors. The standards require planning and performance of the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for observations and conclusions based on the audit objectives.

Management is responsible for establishing and maintaining effective risk management, internal control, and governance. The review was performed using a risk-based audit approach that did not include evaluation of every process, transaction, or activity occurring during the scope period. As a result, complete assurance cannot be provided that all processes are effectively controlled and that all errors, irregularities, and instances of noncompliance occurring during the scope period were identified.
Issues and Recommendations

The following recommendations are based on our observations and conclusions regarding risk management, internal control, and governance relative to EMC. The views of management and their associated responses to audit recommendations are presented as management action plans.

I. Dispensary Inventory

Dispensary inventory is not adequately tracked. EMC dispensary inventory is not adequately tracked. A physical inventory count was conducted for a sample of eight medications, all controlled substances. Of the eight medications reviewed, four (50%) did not reconcile to the available quantities listed in ezyVet, which is the master inventory management system. In each instance, the physical inventory count was less than the available quantity listed. Discrepancies between available quantities and physical counts ranged from 3 to 34 percent.

Additional recommendations include: ezyVet is not setup to track medications by lot number and, therefore, does not monitor medication expiration dates. Currently, lot numbers and expiration dates are tracked via the CUBEX system. CUBEX is a system of secure cabinets used to store, track, and dispense medications and supplies. However, CUBEX is not EMC’s master inventory management system. Further, not all medications are stored in CUBEX cabinets, such as backstock, items maintained in locked pelican cases for quick use, and items secured in a lockbox outside of the dispensary for after-hours emergencies. During the physical inventory count, a medication vial that had expired in August 2020 was found in the lockbox outside of the dispensary.

Periodic inventory audits are not conducted throughout the year. There is only one inventory audit conducted at fiscal year-end. In addition, there does not appear to be adequate training regarding dispensary operations. The Dispensary Supervisor was out on leave during the site visit, and the Veterinary Service Technician providing coverage was unsure of some of the procedures utilized by the Dispensary Supervisor in tracking medications and monitoring expiration dates.

Code of Federal Regulations § 1301.76 states that the applicable Field Division Office of the Drug Enforcement Administration (DEA) shall be notified of the theft or significant loss of any controlled substances and that a specific form should be used to report the theft or loss. As a result, EMC management will need to review the inventory discrepancies to determine if notification to the DEA is necessary.

Improving the dispensary inventory management process will ensure accountability and compliance with DEA reporting requirements as well as provide assurance that clients are being charged appropriately for all medications. Failure to accurately track medications increases the risk of theft and/or loss.
**Recommendation:**
EMC management should improve the dispensary inventory management process to ensure that medications are appropriately accounted for and tracked. In doing so, management should consider:

- Implementing periodic inventory audits of medications.
- Configuring ezyVet to track medications by lot number and monitor for expiration dates.
- Removing medications from the lockbox outside of the dispensary now that CUBEX cabinets are utilized and can be accessed for after-hours emergencies.
- Training appropriate personnel regarding dispensary operations to ensure adequate coverage in the absence of the Dispensary Supervisor.

In addition, EMC management should review the discrepancies identified during the physical inventory count and determine if notification to the DEA is necessary.

**Management Action Plan:**
Starting September 30, 2021, EMC will implement quarterly inventory audits of a random sample of medications. The inventory audit will consist of a physical on-hand count followed by a verification of inventory in CUBEX and ezyVet. Discrepancies will be investigated and corrected with a justification for the correction documented. The results and justifications will be archived for future review.

Currently, CUBEX is used to track medication expiration dates due to a lack of functionality within ezyVet. This is a known issue with ezyVet leadership. It is their top priority for the coming year to develop a more compliant pharmacy module. EMC will continue monitoring ezyVet functionality to determine when this control can be implemented. Until such time, EMC will document its process for tracking medication lot numbers and expiration dates.

EMC has determined that the lockbox outside of the dispensary is necessary as it is the emergency stock for critical medications in the event the CUBEX cabinets are not accessible due to power or network failure. However, EMC will implement a monthly check of expiration dates, which will be documented on the lockbox. Additionally, access to the lockbox will be closely monitored and documented once power or network failures are concluded.

EMC will continue to train additional personnel in dispensary operations to ensure adequate coverage. The training will be documented and maintained in a log.

Lastly, EMC will fully evaluate the controlled substance discrepancies during its fiscal year-end inventory and determine if there is a concern for significant loss and the need to notify the DEA.

Michael D. Erskine, Director of EMC, is responsible for implementing this action plan by January 31, 2022.
II. Delinquent Accounts

EMC delinquent accounts are not appropriately monitored. A review of 15 client accounts from the EMC aged receivables report revealed the following:

- Twelve (80%) accounts either did not include an assessment of late fees and/or finance charges or were assessed such charges several months after the initial service dates.
- One (7%) account was provided a new service but did not make advance payment for the estimated charges.
- Four (27%) accounts had become delinquent (i.e., 91 days past due) and were either not referred to OUB timely (three, eight, and 18 months late) or not referred at all.

An expanded review of EMC’s aged receivables report revealed an additional delinquent account that was referred to OUB four months late and one other delinquent account that was not referred. Additionally, a review of 15 client accounts approved for payment plans showed that one account was provided a payment plan approximately eight months after being invoiced instead of being sent to OUB for collection.

OUB is responsible for the collection of all delinquent accounts. University policy 3605, Accounts Receivable, defines delinquent receivables as those that are past due 91 days and beyond. Further, the policy states that, in accordance with the Commonwealth Accounting Policies and Procedures Manual, the university is required to withhold services to those who refuse to pay their debt. The EMC Procedure for Collecting Payment states that, if a client seeking services has a past due balance, the client is to pay the full amount of the estimate prior to admission. Lastly, the EMC Request for Delaying Payment on Service form notes that a finance charge of .667% will be assessed on the monthly account balance at the end of each month.

Per the EMC Operations Manager, EMC was unable to properly track ageing balances and assess finance charges due to staff turnover in 2020; as a result, EMC elected to renew the collection process for all accounts in November 2020, meaning that accounts would be marked as delinquent but treated as though they were current. However, EMC did make referrals to OUB in March and April 2021.

EMC ended fiscal year 2019-20 with an operational deficit of approximately $446,000, which can be attributed, at least in part, to the COVID-19 pandemic. However, EMC’s accounts receivable balance totaled approximately $653,000 as of January 31, 2021. Therefore, it is essential for EMC to properly monitor its accounts receivable to ensure the continued collection of payments and its financial stability.

Recommendation:
EMC management should improve the accounts receivable monitoring process. In doing so, management should consider:
• Implementing a process to ensure that applicable finance charges and late fees are assessed routinely.

• Consulting with the ezyVet vendor to determine if assessment of finance charges and late fees can be automated to reduce manual effort.

• Strengthening enforcement of EMC policy requiring clients with past due accounts who are seeking additional services to pay the full amount of the new estimate prior to admission.

• Implementing a process to ensure that client accounts are sent to OUB once they become delinquent.

**Management Action Plan:**

EMC will take steps to improve the accounts receivable monitoring process by:

• Ensuring that applicable finance charges and late fees are assessed routinely. Currently, finance charges and late fees are a manual process in ezyVet; they are assessed at the end of each month prior to running client statements. EMC will document the process to help ensure that these fees are consistently assessed appropriately.

• Reminding personnel of EMC policy requiring clients with past due accounts who are seeking additional services to pay the full amount of the new estimate prior to admission.

• Ensuring that client accounts are sent to OUB once they become delinquent. There was a transition period resulting from a change in practice management systems in January 2020 while EMC was auditing clients’ accounts receivable data to ensure accuracy. There was another transition period after December 2020 with some delinquent accounts that had not been handled in this way previously to ensure the client had been afforded adequate time to pay, in an effort to preserve good-will with the clients. Currently, EMC management makes monthly courtesy calls to clients with overdue accounts and attempts to enroll overdue accounts on a payment plan whenever possible. If the account is not on an approved payment plan, the account is referred to OUB when it reaches 91 days past due. EMC will continue to review its monthly aged receivables report to ensure accounts are being sent to OUB and will document this review.

EMC has consulted with the ezyVet vendor and determined that the system does not have the capability to automate the assessment of finance charges and late fees. However, EMC management will continue to explore options for automating this process.

Michael D. Erskine, Director of EMC, is responsible for implementing this action plan by October 31, 2021.
III. Compliance with Financial Policies

EMC did not comply with its financial policies regarding provision of estimates and collection of deposits/payments. The EMC Procedure for Collecting Payment states, “EMC’s standard practice is to collect 50% of the estimated cost of a procedure at the time of admission with the balance due at dismissal. For outpatient services, no deposit is required; the customer will pay in full at the time of dismissal.” The following non-compliance issues were identified during the testing of 15 invoices:

- 12 of 13 (92%) service visits did not provide full payment at discharge.
- 2 of 7 (29%) inpatient visits did not include an estimate for services.
- 3 of 5 (60%) inpatient visits where an estimate was provided did not include a deposit of 50 percent or included a deposit multiple days after admission.

EMC updated its financial and collection policies in April 2021. The financial policy now states that EMC will request payment in full at the time of service for outpatient procedures and will request a deposit of 50% of the estimate for inpatient procedures at time of admission. The collection policy states that, if payment in full is not made at patient discharge, then the client will be billed monthly, or an approved payment plan will be activated. The EMC Operations Manager stated that the policies were updated to reflect EMC’s current operating procedures since the implementation of ezyVet and the practice of issuing monthly client statements began.

Although EMC has updated its policies to reflect current operating procedures, the weakened language of the policies in only requesting deposits and full payments may have a significant impact on the accounts receivable balance, which, as noted previously, totaled $653,000 as of January 31, 2021. Failure to secure deposits and payments at the time of service increases the overall accounts receivable balance and, therefore, increases the risk of delinquent accounts. Further, the consistent provision of estimates to customers is necessary to ensure that customers can assess their financial ability to pursue treatment.

Recommendation:
EMC management should:

- Coordinate with college management and OUB to reassess changes made to its financial policies regarding collection of deposits and payments at time of service and consider stronger enforcement of collecting payments.
- Remind personnel of its expectations regarding adherence to EMC policies concerning provision of estimates.

Management Action Plan:
EMC will coordinate with college management and OUB to review changes made to its financial policies regarding collection of deposits and payments to determine whether these changes are appropriate and provide the most advantageous financial practice.
EMC will continue to remind personnel of the importance of providing estimates to clients. Following COVID-19 workforce adjustments and existing telework agreements, all invoice auditing processes will be conducted on-site going forward. The EMC management team and front office personnel are providing enhanced administrative support for our faculty to ensure that accurate and timely estimates are given to clients. This includes developing ezyVet sales templates to assist faculty in giving accurate and timely estimates and a daily review of hospitalized patients to ensure an estimate has been given and recorded in ezyVet.

Michael D. Erskine, Director of EMC, is responsible for implementing this action plan by October 31, 2021.

IV. Supplies Inventory

Supplies inventory is not adequately tracked. EMC supplies inventory is not adequately tracked. A sample of 15 supply items was selected from the ezyVet master inventory list to conduct a physical inventory count. However, according to the EMC Operations Manager, 3 of 15 (20%) items should not have been included as inventory controlled as the items, which included needles and syringes, are large in quantity and are frequently consumed. Review of the remaining 12 items revealed the following issues:

- 5 of the 12 items (42%) did not reconcile to the available quantities in ezyVet.
- For 3 of 6 items (50%) that were stored in CUBEX cabinets, the inventory count in the CUBEX software did not reconcile to ezyVet.

Additionally, one of the sampled items, polysorb sutures, had a negative available quantity listed in ezyVet as of the date of testing. An EMC Veterinary Service Specialist explained that the item had been zeroed out in ezyVet during the fiscal year-end inventory count as there were none located; however, additional sutures were found during the year and continued to be used and charged to clients, which resulted in a negative quantity. Further review of the ezyVet inventory report showed 82 items with a negative available quantity and an additional 132 items with an available quantity of zero.

The EMC Operations Manager stated that they are still adjusting to using the new ezyVet system and there is work still to be done. He noted that EMC needs to perform an overall audit of inventory to better determine which items should be inventory controlled and to ensure that available quantities are accurate. In addition, EMC does not conduct periodic inventory audits throughout the year; there is only one inventory audit conducted at fiscal year-end. However, the discrepancies with the polysorb sutures noted above indicate that the annual inventory audit is not effective.

For fiscal year 2019-20, EMC medical and dental supply expenditures totaled approximately $700,000. Improving the supplies inventory management process will help ensure accountability and accuracy. Failure to accurately track supplies increases the risk of theft and/or loss. Further, there is no assurance that clients are being charged appropriately for all supplies.
**Recommendation:**
EMC management should improve the supplies inventory management process to ensure that supplies are appropriately accounted for and tracked. In doing so, management should consider:

- Implementing periodic inventory audits.
- Performing a thorough inventory of supplies to determine quantities on hand and to reconcile quantities in CUBEX and ezyVet.
- Establishing a methodology to determine which supply items should be inventory controlled and adjusting the master inventory list, as necessary.
- Enhancing the annual inventory process to reconcile discrepancies identified, as necessary.

**Management Action Plan:**
Starting September 30, 2021, EMC will implement quarterly inventory audits of a random sample of clinical supplies. The inventory audit will consist of a physical on-hand count followed by a verification of inventory in CUBEX and ezyVet. Discrepancies will be investigated and corrected with a justification for the correction documented. The results and justifications will be archived for future review.

A full inventory of supplies will be conducted on June 30, 2021, and all on-hand counts will be reconciled in CUBEX and ezyVet.

The Dispensary Supervisor and the Operations and Hospital Support Services Manager will develop and document a methodology to determine which supply items need to be inventory controlled and update product properties in ezyVet, as necessary.

Patrick J. Wolak, Operations and Hospital Support Services Manager, is responsible for implementing this action plan by January 31, 2022.
Personnel Involved with Audit

Audit Team Information

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ryan S. Hamilton</td>
<td>Auditor-in-Charge</td>
</tr>
<tr>
<td>Timothy S. Parker</td>
<td>Senior Auditor for Special Projects</td>
</tr>
<tr>
<td>Mauro A. Castro Silva</td>
<td>Staff Auditor</td>
</tr>
</tbody>
</table>

Management Contacts

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michael D. Erskine</td>
<td>Director of Equine Medical Center</td>
</tr>
<tr>
<td>Drema B. Foster</td>
<td>Director of Clinical Business Operations</td>
</tr>
<tr>
<td>April G. Hylton</td>
<td>Assistant Dean for Administration</td>
</tr>
<tr>
<td>Karen Mills</td>
<td>Dispensary Supervisor</td>
</tr>
<tr>
<td>Patrick J. Wolak</td>
<td>Operations Manager</td>
</tr>
</tbody>
</table>

Contact Information

For questions regarding this review, contact Justin T. Noble, Director of Internal Audit.

Office of Audit, Risk, and Compliance (0328)  Email: jtnoble@vt.edu
North End Center, Suite 3200                Phone: (540) 231-5883
300 Turner Street NW                        Website: www.oarc.vt.edu
Blacksburg, Virginia 24061

Distribution List

Cyril R. Clarke
Michael D. Erskine
Drema B. Foster
M. Daniel Givens
April G. Hylton
Sharon M. Kurek
Lauren Lawson
Kenneth E. Miller
Dwayne L. Pinkney
Timothy D. Sands
Melinda J. West
Patrick J. Wolak
Virginia Tech

Audit No. 21-1540a: Veterinary Teaching Hospital

Audit Report
June 30, 2021
# Table of Contents

## Executive Summary
- Assessment .............................................................................................................. 2
- Summary of Issues and Action Plans ......................................................................... 2
- Acknowledgement of Satisfactory Performance ......................................................... 2

## Engagement Overview
- Background .................................................................................................................. 3
- Risk Exposure ................................................................................................................ 3
- Audit Objectives ............................................................................................................ 3
- Scope .............................................................................................................................. 4
- Criteria ........................................................................................................................... 4

## Issues and Recommendations
- I. Supplies Inventory .................................................................................................. 5

## Personnel Involved with Audit
- Audit Team Information ............................................................................................. 7
- Management Contacts ................................................................................................. 7
- Contact Information ...................................................................................................... 7
- Distribution List ............................................................................................................ 7
Executive Summary

Assessment
Our audit indicated that management has designed and implemented controls that are often effective at reducing the Veterinary Teaching Hospital’s (VTH) exposure to many of the business risks that are faced, but improvements are recommended to achieve a fully effective system of internal controls. Audit recommendations were issued to management where opportunities for further improvements were noted related to supplies inventory management. A low-priority recommendation of a less significant nature was noted regarding controls over adjustments to supplies inventory.

Summary of Issues and Action Plans
The following observations were noted during our review, and recommendations were issued to address the related business risks:

- **Supplies inventory is not adequately tracked.** There is no process in place to track supplies within the various VTH wards. Failure to accurately track supplies increases the risk of theft and/or loss. Further, there is no assurance that clients are being charged appropriately for all supplies.

  VTH will take steps to improve the supplies inventory management process by implementing quarterly inventory audits, establishing procedures for supplies management for use by the entire hospital, establishing a methodology to determine which supply items should be inventory controlled, and monitoring supplies expense to assess consumption rates.

VTH has developed management action plans that effectively address the issues in the report, and the proposed timeline of implementing all action plans by January 31, 2022 is reasonable.

Acknowledgement of Satisfactory Performance
VTH has established appropriate internal controls over pharmacy inventory, delinquent accounts, invoicing, and funds handling. Medications were properly safeguarded and tracked, and expired medications were disposed of appropriately. Delinquent accounts were monitored and referred to the Office of the University Bursar timely, and collection efforts were routinely made. VTH’s chart auditing process helped ensure that client charges were accurate and complete. Lastly, funds were adequately safeguarded.
Engagement Overview

Background
VTH is part of the Virginia-Maryland Regional College of Veterinary Medicine (CVM). VTH is a comprehensive small and large animal hospital, with state-of-the-art equipment and board-certified veterinarians providing basic and specialty services to animals referred from a multi-state region. The VTH experience is the clinical portion of the education for the Doctor of Veterinary Medicine degree awarded by the CVM.

VTH also provides specialty training to interns and residents from around the world. Additionally, the Production Management Medicine groups offer ambulatory field service locally and herd and flock health programs for agricultural producers throughout the two-state area. VTH is managed as a full service, by appointment, and emergency hospital, 24 hours a day, every day of the year.

Currently, VTH utilizes multiple information systems to manage its operations. However, there are plans to transition to a new practice management system, ezyVet, in fiscal year 2021-22. ezyVet is a cloud-based system that is designed to manage scheduling, clinical records, client communication, business transactions, and inventory.

Risk Exposure
The Office of Audit, Risk, and Compliance periodically performs a detailed risk assessment of the university’s auditable entities using factors such as the amount of cash inflows, operating expenditures, research activities, management of sensitive information, and level of external regulation. The goal of the risk assessment is to prioritize those entities within the university that should receive audit attention. VTH was determined to be a high-risk entity due to its pharmacy operations, services provided to outside clients, and the high volume of decentralized funds handling activities.

Audit Objectives
In planning the engagement, the audit staff met with CVM and VTH senior managers and directors to identify business goals and objectives, potential risks, processes to mitigate those risks, and potential audit objectives. The Auditor-in-Charge performed a risk assessment of the information obtained to evaluate the adequacy and effectiveness of the processes in place, identify areas of high risk, and establish audit objectives. Audit objectives were identified as follows:

- To determine whether pharmacy/dispensary inventory is adequately safeguarded and tracked.
- To determine whether delinquent accounts are appropriately monitored and whether collection efforts are made.
- To determine whether client invoices are accurate, complete, and timely.
- To determine whether funds are adequately safeguarded.
- To determine whether supplies inventory is adequately safeguarded and tracked.
**Scope**
To accomplish our objectives, we obtained an understanding of departmental procedures by interviewing key personnel, observing operating processes, evaluating the adequacy of existing policies and procedures, assessing the adequacy of internal controls, evaluating compliance with established policies and procedures, and performing other audit procedures as considered necessary. The audit covered the period of February 1, 2020 to January 31, 2021.

**Criteria**
This independent and objective review was conducted in conformance with the *International Standards for the Professional Practice of Internal Auditing* promulgated by the Institute of Internal Auditors. The standards require planning and performance of the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for observations and conclusions based on the audit objectives.

Management is responsible for establishing and maintaining effective risk management, internal control, and governance. The review was performed using a risk-based audit approach that did not include evaluation of every process, transaction, or activity occurring during the scope period. As a result, complete assurance cannot be provided that all processes are effectively controlled and that all errors, irregularities, and instances of noncompliance occurring during the scope period were identified.
Issues and Recommendations

The following recommendation is based on our observations and conclusions regarding risk management, internal control, and governance relative to VTH. The views of management and their associated response to the audit recommendation is presented as a management action plan.

I. Supplies Inventory

Supplies inventory is not adequately tracked within the various VTH wards. University policy 3950, Fixed Asset Accounting, states that university departments are expected to establish reasonable business practices over university assets, including supplies and materials, to meet their fiduciary responsibilities of safeguarding and protecting university assets.

Review of the VTH wards and discussion with ward technicians revealed that there is no process in place to track supplies received from the VTH Stores or purchased independently. Ward technicians stated that VTH operates primarily on a fee-for-service basis and, therefore, tracking supplies inventory is largely unnecessary. However, the technicians acknowledged that there are items charged directly to clients.

Supplies inventory has significant value for VTH. As of January 29, 2021, the total value of supplies maintained in the VTH Stores was approximately $92,000. The value of supplies within the VTH wards is unknown. However, the VTH Storekeeper Senior estimated that they disburse an average of $2,000 worth of supplies to the wards each day. The wards also procure items independently via purchase card and HokieMart. For fiscal year 2019-20, VTH medical and dental supply expenditures totaled approximately $2.7 million.

Failure to accurately track supplies increases the risk of theft and/or loss. Further, there is no assurance that clients are being charged appropriately for all supplies. As VTH intends to upgrade to the ezyVet practice management system in the near future, it is imperative for VTH to evaluate supplies inventory throughout the hospital and to develop procedures to account for and track supplies.

Recommendation:

VTH management should improve the supplies inventory management process to ensure that supplies are appropriately accounted for and tracked. In doing so, management should consider:

- Implementing periodic inventory audits throughout the hospital.
- Establishing procedures for supplies management in anticipation of the upgrade to ezyVet.
• Performing a thorough inventory of all supplies to determine quantities on-hand.
• Establishing a methodology to determine which supply items should be inventory controlled.

Management Action Plan:
VTH will take steps to improve the supplies inventory management process by:
• Implementing a quarterly inventory audit of all chargeable items beginning September 30, 2021.
• Establishing and documenting procedures for supplies management for use by the entire hospital in anticipation of the upgrade to ezyVet in January 2023.
• Establishing a methodology to determine which supply items should be inventory controlled.
• Monitoring medical supplies expense by ward to assess consumption rates.

Anthony M. Grafsky, Hospital Administrator, is responsible for implementing this action plan by January 31, 2022.
Personnel Involved with Audit

Audit Team Information

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ryan S. Hamilton</td>
<td>Auditor-in-Charge</td>
</tr>
<tr>
<td>Timothy S. Parker</td>
<td>Senior Auditor for Special Projects</td>
</tr>
<tr>
<td>Mauro A. Castro Silva</td>
<td>Staff Auditor</td>
</tr>
</tbody>
</table>

Management Contacts

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drema B. Foster</td>
<td>Director of Clinical Business Operations</td>
</tr>
<tr>
<td>Anthony M. Grafsky</td>
<td>Hospital Administrator</td>
</tr>
<tr>
<td>April G. Hylton</td>
<td>Assistant Dean for Administration</td>
</tr>
<tr>
<td>V. Gail Kibler</td>
<td>Computer Systems Engineer</td>
</tr>
<tr>
<td>William S. Swecker Jr.</td>
<td>Hospital Director</td>
</tr>
</tbody>
</table>

Contact Information
For questions regarding this review, contact Justin T. Noble, Director of Internal Audit.

Office of Audit, Risk, and Compliance (0328)  Email: jtnoble@vt.edu
North End Center, Suite 3200                  Phone: (540) 231-5883
300 Turner Street NW                          Website: www.oarc.vt.edu
Blacksburg, Virginia 24061

Distribution List
Cyril R. Clarke
Drema B. Foster
M. Daniel Givens
Anthony M. Grafsky
April G. Hylton
Sharon M. Kurek
Lauren Lawson
Kenneth E. Miller
Dwayne L. Pinkney
Timothy D. Sands
William S. Swecker Jr.
Melinda J. West
Academic Enterprise Risk Discussion

Board of Visitors Meeting

Guru Ghosh
Don Taylor

November 2021
Today’s Agenda

• Evolving Pedagogy & Delivery
• Faculty & Staff Recruiting & Retention
• Global Engagement
Evolving Pedagogy & Delivery

Campus Environment:

- Pedagogy, course delivery methods, and student perceptions are rapidly evolving.
- Experiential learning is becoming much more important to adult learners.
- The pandemic has made on-line learning more ubiquitous, yet the quality is often mixed.
- Employer needs are rapidly shifting, necessitating new programs.
- Innovation often appears in the boundaries between disciplines, requiring knowledge of how to tackle complex problems, leveraging technology and working in diverse teams.
Mitigation Strategies

Practice continuous improvement in curriculum and course design to meet changing market demands, student expectations, and economic growth opportunities.

- DA/SGA Curricula
- Pathways general education
- Degree and major innovation
- Experiential learning academy
- Online learning committee established
Faculty & Staff Recruitment & Retention

Current Status:

• Seeking ways to increase faculty salaries and offer more competitive start-up packages
• Seeking ways to increase research funding and productivity
• Seeking ways to broaden our portfolio of state-of-the-art courses and majors
• Seeking to maintain appropriate student-faculty ratios
Plan a recruitment budget that allows for competitive start-ups

Allocate salary funding to facilitate market competitive salaries

Allocate a budget that funds dual career hires
Risk Statement:

- Challenges in expanding international experiential experiences for students, geographic diversity in recruiting international students, and growing global research portfolio.
Sub-Risks:

• Dependence on relatively few countries for international students
• Lack of standardization of study abroad programs
• Growth on the African continent
• Limited participation of students in study abroad experiences
• Global Education, Global Research and Global Recruitment
Mitigation Strategies

- Continue diversifying international recruitment activities and expand VT Bound program
- Developing institutional expertise in Africa
- Grow funding opportunities for global experiential experiences
- Compliance of best practices established by the forum on education abroad-QUIP standards
• Each college should identify personnel responsible for international programs with liaison responsibilities to the office of outreach and international affairs. Deans and VPOIA should identify personnel and their responsibilities and provide appropriate training through OIA and Global Education Office based on responsibilities.

• Pursue scholarship support for student to use specifically for study abroad. VPOIA and Provost taking leadership on scholarship initiative.

• Formalize more international recruitment initiatives at the university.
General Discussion
The Chair of the Compliance, Audit, and Risk Committee will discuss agenda items for future meetings and adjourn the committee meeting.