

Committee Minutes

FINANCE AND AUDIT COMMITTEE

Duck Pond Room, The Inn at Virginia Tech

August 29, 2016

Audit Closed Session

Board Members Present: Mr. Jim Chapman, Mr. Charles T. Hill, Mr. Dennis Treacy, Mr. Wayne Robinson

VPI & SU Staff: Ms. Kay Heidbreder, Ms. Sharon Kurek, Dr. Timothy Sands, Ms. Savita Sharma, Mr. M. Dwight Shelton Jr.

Guest: Ms. Raina Rose Tagle

1. **Update on Fraud, Waste, and Abuse Cases:** The Committee received an update on outstanding fraud, waste, and abuse cases.
2. **Review and Acceptance of the Report on the External Quality Assessment of the University's Internal Audit Function:** The Committee reviewed the report on the external quality assessment of the university's internal audit function. The external assessment team, led by consultant Baker Tilly, completed their onsite visit during May 2016. The university provided full support to the review team during the course of the assessment.

Results indicated that the internal audit function "generally conforms" with the IIA Standards, which is the highest rating. Overall, it was determined that University Internal Audit has established a strong foundation of alignment to the Standards and has a history of solid work performance. This report was presented in the Closed session due to discussion of performance of University Internal Audit employees.

The Committee accepted the report.

3. **Director of Internal Audit Performance Review:** The Committee provided an annual performance review to the Director of Internal Audit.

4. **Discussion with the Director of Internal Audit:** The Director of Internal Audit discussed audits of specific departments and units where individual employees were identified.

Audit Open Session

Board Members Present: Mr. Jim Chapman, Mr. Charles T. Hill, Mr. Dennis Treacy, Mr. Wayne Robinson

VPI & SU Staff: Mr. Bill Abplanalp, Ms. Beth Armstrong, Mr. Bob Broyden, Ms. D'Elia Chandler, Ms. Meredith Colonna, Mr. Al Cooper, Mr. John Cusimano, Mr. Brian Daniels, Dr. John Dooley, Ms. Kay Heidbreder, Ms. Mary Helmick, Mr. Tim Hodge, Ms. Elizabeth Hooper, Ms. Katie Huger, Ms. Sharon Kurek, Ms. Nancy Meacham, Dr. Scott Midkiff, Mr. Ken Miller, Ms. Terri Mitchell, Mr. Mark Owczarski, Dr. Scot Ransbottom, Mr. Charlie Ruble, Ms. Savita Sharma, Mr. M. Dwight Shelton Jr., Mr. Ken Smith, Mr. Brad Sumpter, Mr. Jon Clark Teglas, Ms. Tracy Vosburgh

1. **Opening Remarks and Approval of Minutes of the June 6, 2016 Meeting:** The Committee reviewed and approved the minutes of the June 6, 2016 meeting.
2. **Review and Acceptance of University's Update of Responses to all Previously Issued Internal Audit Reports:** The Committee reviewed the university's update of responses to all previously issued internal audit reports. As of March 31, 2016, the university had 24 open recommendations. Six audit comments have been issued during the fourth quarter of this fiscal year. As of June 30, 2016, the university has addressed 16 comments, leaving 14 open recommendations in progress. Through July 29, 2016, Internal Audit has closed one of the 14 open recommendations. The Committee received a briefing at the meeting that reviewed the status of the outstanding comments, including the comments that have been addressed since June 30, 2016.
3. **Presentation, Discussion, and Acceptance of University Internal Audit's Annual Status Report for the Fiscal Year Ended June 30, 2016:** The Committee reviewed University Internal Audit's Annual Status Report as of June 30, 2016. 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 Audit Charter. In addition to conducting scheduled audits, compliance reviews, and advisory services, the

department participated in annual audit activities, fraud investigations, and professional development activities. Twenty-nine audit projects, or 91 percent of the audits on the fiscal year 2015-16 audit plan, have been completed. Three risk-based audits were underway at fiscal year-end and will be carried forward to fiscal year 2016-17. The Committee also received an overview of cost containment recommendations, recurring audit issues, and survey results for evaluating University Internal Audit services. The Committee commended University Internal Audit for the thorough reviews conducted by the Internal Audit staff.

The Committee accepted the report.

4. **Review and Approval of the Fiscal Year 2016-17 Internal Audit Plan:** The Committee reviewed the proposed audits for the approval of the fiscal year 2016-17 annual audit plan. University Internal Audit conducted the annual risk assessment after reviewing financial and operational data and seeking input from senior management. In addition, a university-wide information technology risk assessment and audit plan were created in accordance with industry standards. For fiscal year 2016-17, approximately 30 audit projects are proposed, with 74 percent of available resources committed to the completion of planned projects. Audits not completed in the fiscal year scheduled will be carried forward to the next fiscal year. The Committee requested a report regarding the NCAA compliance program be presented at a future meeting.

The Committee approved the Fiscal Year 2016-17 Internal Audit Plan.

5. **Review and Acceptance of the following Reports Issued by University Internal Audit:** The Committee reviewed and accepted five internal audit reports and one compliance review:
 - a. **Athletics NCAA Compliance:** The audit received a rating of improvements are recommended. An audit recommendation was issued to management where opportunities for further improvement were noted in the area of conflict of interest. A low-priority recommendation was noted where opportunities for improvement were identified with regard to rules education.
 - b. **Human Resources: Leave Accounting:** The audit received a rating of improvements are recommended. An audit recommendation was issued to management where opportunities for further improvement were noted in the area of manual processes. Additionally, low-priority recommendations of a less significant nature were noted where opportunities for improvement were

identified with regard to retention of employee records, improper calculation of prior state service, and improper leave accrual.

- c. Graduate Admissions Application System: The audit received a rating of significant improvements are needed. Audit recommendations were issued to management where opportunities for further improvement were noted in the areas of security over personally identifying information (PII), audit trails, system access, and reconciliation of fee revenue. Additionally, low-priority recommendations of a less significant nature were noted where opportunities for improvement were identified with regard to the Graduate School admissions process and the documentation of fee waivers. The Committee requested a detailed update regarding the implementation status of these audit recommendations be presented at the next meeting.
- d. Institute for Society, Culture, and Environment: The audit received a rating of effective.
- e. Interdisciplinary Center for Applied Mathematics: The audit received a rating of effective. A low-priority recommendation was issued to management where opportunities for improvement were identified with regard to timeliness of effort reporting.
- f. Office of the Executive Vice President and Provost: The compliance review received a rating of effective. A recommendation for central administration was noted in the area of conflict of interest. Additionally, a low priority recommendation was issued to management where opportunities for further improvement were noted in the area of funds handling.

The Committee accepted all six reports.

- 6. **Discussion of the Current Status of the June 30, 2016 Audit of the University's Financial Statements:** The Committee received a report on the current status of the audit of the university's financial statements for 2015-16. The audit is proceeding according to schedule and the auditors will report the results at the November meeting. At this time, the university is not aware of any significant issues related to the audit.
- 7. **Update on the Department of Education Onsite Student Financial Aid Review:** The Committee received an update on the U.S Department of Education's (DOE) onsite program review of the university's Student Financial Aid

Programs. The focus of the review was to determine Virginia Tech's compliance with the statutes and federal regulations as they pertain to the institution's administration of Title IV programs. Title IV programs are federal student aid programs authorized under Title IV of the Higher Education Act (HEA) and include federal grants, loans and work-study programs. The review consisted of, but was not limited to, an examination of Virginia Tech's policies and procedures regarding institutional and student eligibility, individual student financial aid and academic files, attendance records, student account ledgers, and consumer information requirements.

DOE issued a preliminary program review report listing initial findings of the review on June 28, 2016. The university is actively reviewing and developing responses to the initial findings. The university has 60 days to respond and provide any supporting documentation for DOE's consideration after which the DOE will issue its final findings in a subsequent Final Program Review Determination (FPRD) letter.

Finance Closed Session

Board Members Present: Mr. Jim Chapman, Mr. Charles T. Hill, Mr. Dennis Treacy, Mr. Wayne Robinson

VPI & SU Staff: Ms. Kay Heidbreder, Ms. Sharon Kurek, Dr. Timothy Sands, Ms. Savita Sharma, Mr. M. Dwight Shelton Jr.

1. **Motion for Closed Session:** Motion to begin closed session.
- * 2. **Ratification of Personnel Changes Report:** The Committee reviewed and took action on the quarterly personnel changes report.

The Committee recommended the Personnel Changes report to the full Board for approval.

- * 3. **Approval of the 2016-17 National Distinction Program:** The Committee reviewed and took action on the 2016-17 National Distinction Program. The National Distinction Program, approved by the Board in June 2016, was established to provide opportunity to recognize faculty with demonstrated national distinction and exceptional performance.

The Committee recommended the National Distinction Program to the full Board for approval.

4. **Update on VT-Applied Research Corporation:** The Committee received an update on VT-Applied Research Corporation. This report was presented in closed session due to discussion of personnel related matters.

Finance Open Session

Board Members Present: Mr. Jim Chapman, Mr. Charles T. Hill, Mr. Dennis Treacy, Mr. Wayne Robinson

VPI & SU Staff: Mr. Bill Abplanalp, Ms. Beth Armstrong, Mr. Bob Broyden, Mr. Al Cooper, Ms. D'Elia Chandler, Ms. Meredith Colonna, Mr. David Crotts, Mr. John Cusimano, Mr. Brian Daniels, Dr. John Dooley, Ms. Kay Heidbreder, Ms. Mary Helmick, Mr. Tim Hodge, Ms. Elizabeth Hooper, Mr. Steve Huff, Ms. Katie Huger, Ms. Sharon Kurek, Dr. Theresa Mayer, Ms. Nancy Meacham, Dr. Scott Midkiff, Mr. Ken Miller, Ms. Terri Mitchell, Mr. Mark Owczarski, Mr. Charles Phlegar, Dr. Scot Ransbottom, Mr. Charlie Ruble, Ms. Savita Sharma, Mr. M. Dwight Shelton Jr., Mr. Ken Smith, Mr. Brad Sumpter, Mr. Jon Clark Teglas, Ms. Tracy Vosburgh

1. **Motion to Reconvene in Open Session:** Motion to begin open session.
2. **Approval of Items Discussed in Closed Session:** The Committee reviewed and took action on items discussed in closed session.
3. **Opening Remarks and Approval of Minutes of the June 6, 2016 Meeting:** The Committee reviewed and approved the minutes of the June 6, 2016 meeting.

Upon the request of the Committee Chair, the Vice President for Finance and Chief Financial Officer provided information on the nature and types of cash reserves and investments maintained by the university and associated restrictions on its use.

4. **Update on JLARC Study on Higher Education:** The Committee received a report on the current implementation status of JLARC recommendations to be addressed by the Board of Visitors. The reports issued by the Joint Legislative Audit and Review Commission (JLARC) as part of the two-year study on higher education cost efficiency included recommendations to address the cost of public higher education in Virginia. The approved budget passed by the General Assembly in March 2015, included language recommending seven of the 17 JLARC recommendations which they believe should be addressed by the Board

of Visitors, to the extent practicable. As of June 2016, the university has implemented four of the seven recommendations. This report provided information on the signification completion of recommendations related to the standardization of purchases of commonly procured goods and use of institution-wide contracts. The report also provided an update on the implementation status of the remaining three recommendations.

- 5. Report on Higher Education Restructuring Institutional Performance Standards:** The Committee received a report on the Higher Education Restructuring Institutional Performance Standards (IPS), focusing on finance and administrative performance results for fiscal year 2015. The IPS measures which include academic and finance and administrative measures are the primary performance metrics evaluated by the State under the Restructuring Act. Until fiscal year 2010, the university reported on the IPS measures to the state and provided a report to the committee annually. In May, 2011 SCHEV certified all institutions as meeting IPS standards for 2011-12 to 2013-14 period.

The Higher Education Opportunity Act passed in 2011 suspended the assessment of IPS measures until the Higher Education Advisory Council completed its review of the IPS measures and recommended a new set of reporting measures. The 2013 General Assembly passed the recommended changes to the IPS measures. The number of measures were significantly reduced, and the assessment period changed from an annual reporting period to a biennial reporting period. The changes to the IPS measures were mainly for the academic measures; no significant changes were made to the finance and administrative measures.

In July 2016, the university reported on the performance of the finance and administrative measures for fiscal year 2015 to the Secretaries of Finance, Administration, and Education. The assessment of the academic measures is conducted by State Council for Higher Education of Virginia (SCHEV). This report provided information on the 17 finance and administrative measures and the university's reported performance for each. The report also provided information on SCHEV's assessment of the academic-related measures. In May 2016 SCHEV reported that Virginia Tech has met all six academic standards. The university is confident that it has achieved compliance with 16 of the 17 finance and administrative measures and anticipates acceptance of its actions regarding the 17th measure. Thus, the university expects to pass the finance and administrative measures with regard to the certification process conducted by SCHEV.

6. **Report on the Development of Cost Containment Opportunities:** In November 2014, the Committee expressed interest in understanding the current and future cost management strategies to continue the effective management of the university within an environment of increasingly constrained resources and also understanding the trends in costs of operating units within the university. The Committee requested the university to review the institution's cost structure and trends in operating costs as well as to consider opportunities for further improvement. In response to the request, the university provided a high level review of university's cost structure, current status of cost management strategies and related outcomes, and future action plans at the June 2015 meeting. The Committee received the second in an integrated series of reports on this topic; the report provided additional analyses on university costs by academic college.
7. **Overview of University Related Corporations:** During the June 2016 Board meeting, the Committee requested information regarding university related corporations. In response to the request, this report provided an overview of the university related organizations, organizational reporting structure, and key activities of certain major related organizations.
8. **Update on VT-Applied Research Corporation:** The Committee received an update on the current financial and operational status of VT-Applied Research Corporation (VT-ARC). VT-ARC has experienced mixed operating results since its initial operating activities. During Fiscal Years 2015 and 2016, VT-ARC continued to obtain sponsored funding, but not at levels sufficient to cover all operating costs and break even. In the Spring of 2015, the university assessed the operations of VT-ARC and asked the corporation to explore its business options for the future.

This assessment work was completed in June of 2016; the decision was to restructure the relationship of the Corporation with the university's research programs and to continue operations in an effort to strengthen and grow the impact of VT-ARC on the university's research operations.

As a result, we expect VT-ARC to continue to operate as a related corporation during fiscal year 2017, and expect it will comply with the requirements of their Affiliation Agreement with the university. The Committee requested a brief update on the status of VT-ARC at the November, 2016 Board meeting.

- * 9. **Approval of Year-to-Date Financial Performance Report (July 1, 2015 – June 30, 2016):** The Committee reviewed for approval the Year-to-Date Financial Performance Report for July 1, 2015 – June 30, 2016. For the fourth quarter, budget

adjustments were made to reflect revisions to projected revenues and expenditures. During the fourth quarter, tuition and fee revenues slightly exceeded the revised budget. Federal revenue budget in the Cooperative Extension/Agricultural Experiment Station Division was decreased by \$3.4 million due to the timing of the receipt of federal drawdowns.

The university successfully closed its fiscal year in accordance with guidance and requirements of the Commonwealth, with a balanced budget for its Educational and General operations, while fully utilizing its General Fund appropriations in the university division. The auxiliary enterprises achieved the annual revenue budget, while expenditures were lower than projected due to the timing of operating expenditures and projects that were initiated but incomplete at year-end.

For the quarter ending June 30, 2016, \$41.9 million has been expended for Educational and General capital projects, and \$49.4 million has been expended for Auxiliary Enterprises capital projects. Total capital outlay expenditures for the quarter ending June 30, 2016 were \$91.3 million.

The Committee recommended the Year-to-Date Financial Performance Report to the full Board for approval.

Joint Open Session

Board Members Present: Mr. Jim Chapman, Mr. Charles T. Hill, Mr. Mike Quillen, Mr. Wayne Robinson, Mr. Steve Sturgis, Mr. Dennis Treacy, Mr. Jeff Veatch

VPI & SU Staff: Mr. Bill Abplanalp, Ms. Beth Armstrong, Mr. Whit Babcock, Mr. Mac Babb, Mr. Bob Broyden, Mr. Al Cooper, Ms. D'Elia Chandler, Ms. Meredith Colonna, Mr. John Cusimano, Mr. Brian Daniels, Dr. John Dooley, Mr. Kevin Foust, Mr. Tom Gabbard, Ms. Kay Heidbreder, Ms. Mary Helmick, Mr. Tim Hodge, Ms. Elizabeth Hooper, Ms. Katie Huger, Ms. Angela Kates, Dr. Chris Kiwus, Ms. Sharon Kurek, Ms. Angela Kates, Dr. Theresa Mayer, Ms. Heidi McCoy, Ms. Nancy Meacham, Dr. Scott Midkiff, Mr. Ken Miller, Ms. Terri Mitchell, Mr. Michael Mulhare, Ms. Laura Neff-Henderson, Mr. Mark Owczarski, Dr. Scot Ransbottom, Mr. Charlie Ruble, Ms. Savita Sharma, Mr. M. Dwight Shelton Jr., Mr. Ken Smith, Mr. Jason Soileau, Mr. Brad Sumpter, Mr. Dwyn Taylor, Mr. Jon Clark Teglas, Ms. Tracy Vosburgh, Dr. Sherwood Wilson

- * 1. **Approval of Resolution for Capital Project for Construction of Baseball Improvements:** The Committees reviewed for approval a resolution for

construction of baseball improvements. The Board of Visitors approved a \$3.5 million blanket planning project in November 2015 for Athletic facilities improvements for baseball, softball, field throwing events, nutrition, and tennis. Under this blanket planning authorization, improvements for each program are being planned independently. At such time as Athletics is ready to move forward with construction of a specific component, the university will bring forward a supplemental request for funding with a firm scope, cost, and schedule for a specific component.

Planning work for a modernized and expanded baseball stadium to meet the needs and expectations of players, fans, and coaches has been underway. The proposed project will modernize and expand all aspects of the baseball stadium including demolishing and replacing the existing press box, restrooms, and concessions; enhancing seating with four new suites, premium seating areas, a rooftop canopy, and canopy wings; and other major improvements for new entrances, a scoreboard, clubhouse, and locker rooms. At this time Athletics is ready to move forward with improvements for the Baseball program. The supplemental project costs to complete the Baseball improvements is \$18 million for a total project cost of \$18.5 million, inclusive of \$500 thousand of planning work already completed.

This request is for approval of an \$18 million supplement authorization for construction of the Baseball Improvements project. As with all self-supporting projects, the university has developed a financing plan to support the supplemental \$18 million of construction and equipment costs for the Baseball Improvements.

The Committees recommended the Resolution for Capital Project for Construction of Baseball Improvements to the full Board for approval.

- * 2. **Approval of Resolution for Capital Project for an Early Site Package for Rector Field House Improvements:** The Committees reviewed for approval a resolution for capital project for an early site package for Rector Field House improvements. The Board of Visitors approved a \$3.5 million blanket planning project in November 2015 for Athletic facilities improvements for baseball, softball, track, field throwing events, nutrition, and tennis. Under this blanket planning authorization, improvements for each program are being planned independently. At such time as Athletics is ready to move forward with construction of a specific component, the university will bring forward a supplemental request for funding with a firm scope, cost, and schedule for a specific component.

Planning work for improvements and expansions of Rector Field House to meet the practice and training needs of the softball program, track program, and field throwing events program has been underway. Planning for the overall building improvements are in the preliminary design phase and designs for the grading and utilities are complete. The project scope includes approximately 44,130 gross square feet of building additions to Rector Field House and improvements to the existing facility including a new roof, restrooms, fire suppression, and mechanical systems. To meet the needs and expectations of the athletes and coaches, the new and improved space must be ready for occupancy by fall 2018. The university has developed a strategy to meet the desired schedule by issuing an early site package that would begin in fall 2016 followed afterwards by a building construction package.

In accordance with the strategy, Athletics and the university are requesting a \$2.4 million authorization to move forward with an early site package for Rector Field House improvements. The package will provide the necessary site work including grading and utilities to support construction of the building additions and the new mechanical systems for the existing facility.

The estimated total project costs to improve and expand Rector Field House for the softball program, track program, and field throwing events are \$18.6 million, inclusive of \$2.6 million of planning work, \$2.4 million for the early site package, and \$13.6 million for the remaining building construction package.

This request is for approval of \$2.4 million for an early site package for Rector Field House improvements. As with all self-supporting projects, the university has developed a financing plan to support the \$2.4 million early site package for the Rector Field House project.

The Committees recommended the Resolution for Capital Project for an Early Site Package for Rector Field House Improvements to the full Board for approval.

- * 3. **Approval of Resolution for Capital Lease for the Virginia Tech Transportation Institute:** The Committees reviewed for approval a resolution for capital lease for the Virginia Tech Transportation Institute. The Virginia Tech Transportation Institute (VTTI) has effected significant change in public policies for driver, passenger, and pedestrian safety and is advancing the design of vehicles and infrastructure to increase safety and reduce environmental impact. VTTI is conducting more than 300 active sponsored research projects totaling approximately \$40 million of annual sponsored research expenditures.

To expand VTTI's strategic initiative of research and development in the connected- and automated-vehicle projects, the institute is developing enhanced research opportunities through the creation of the Virginia Automation Park (Park), a road testing facility that will allow for a more comprehensive range of testing scenarios. The Park will tie directly into the existing Smart Road facilities and will include a myriad of features to provide VTTI with a full range of testing scenarios currently not available, including continuous and seamless driving; autonomous merging with roundabouts and multi-lane roads; low-speed active safety with parking aids, warnings, and indirect visual systems; multi-lane intersections with long approaches, straight approaches, and crossing paths; complex urban areas with pedestrian crossings, bike lanes, and signalized intersections; four-way stops; and multi-vehicle and person complexity scenarios.

Given the need to build upon the existing Smart Road facilities infrastructure, equipment, and personnel, the proposed location for the Park is on approximately seven (7) acres of land located adjacent to the existing VTTI and Smart Road facilities, which is currently leased by Virginia Tech from ExpandTran, LLC, a limited liability company founded by the Virginia Tech Foundation, Inc. Virginia Tech will also have use of approximately twenty-one (21) acres of land located contiguous to the Smart Road facilities through an easement ExpandTran, LLC is acquiring from TORC Robotics, Inc., and will also construct roadways on this land to expand research capabilities by capitalizing on the site's diverse terrain. The estimated cost for the project is approximately \$3 million, and the university has worked with VTTI to develop a nongeneral fund resource plan sufficient to cover the entire costs of the improvements. The opportunity to address VTTI's needs by modifying the existing lease with ExpandTran, LLC meets the capital lease definition and requires a capital authorization. This request is for authorization to modify the existing land lease with ExpandTran, LLC to a capital lease in order to construct the required roadways and infrastructure to create the Virginia Automation Park.

The Committees recommended the Resolution for Capital Lease for the Virginia Tech Transportation Institute to the full Board for approval.

There being no further business, the meeting adjourned at 11:44 a.m.

***Requires full Board approval.**

Report of the External Quality Assessment Review (QAR) of Virginia Tech's Internal Audit Department

August 2016

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Virginia Polytechnic Institute and State University (Virginia Tech or the University) offers 240 undergraduate and graduate degree programs to more than 31,000 students and manages a research portfolio of more than \$500 million. In addition to Virginia Tech's main campus located in Blacksburg, Virginia, the University has the following locations: Northern Virginia (Arlington, Falls Church, and Alexandria), Leesburg, Virginia (Equine Medical Center), Roanoke, Virginia (Virginia Tech Carilion Research Institute), eleven agricultural research and extension centers in all 95 counties, five Commonwealth campus centers across the state of Virginia, four 4-H Educational centers across the state, and campuses in Riva San Vitale, Switzerland, and Punta Cana, Dominican Republic.

The mission of University Internal Audit at Virginia Tech is to provide independent, objective assurance and advisory services designed to add value and improve the University's operations. Additionally, University Internal Audit helps the organization to accomplish its objectives by bringing a systematic, disciplined approach to the identification of opportunities for improvement in the areas of risk management, control, and governance processes.

The internal audit function at Virginia Tech reports functionally to the Finance and Audit Committee of the Board of Visitors (FACBV) and administratively to the University President. Virginia Tech maintains an internal audit function that consists of 14 audit professionals and two student interns.

The University engaged an independent review team consisting of five internal audit professionals with extensive higher education experience to conduct an external quality assessment review (QAR) of the internal audit function. The principal objectives of the QAR were to:

- > Assess the internal audit function's conformance with the *Institute of Internal Auditors (IIA) International Standards for the Professional Practice of Internal Auditing (the Standards)*,
- > Evaluate the internal audit function's effectiveness in carrying out its mission (as outlined in its charter and expressed in the expectations of Virginia Tech's Finance and Audit Committee of the Board of Visitors and management), and
- > Identify opportunities to enhance internal audit management and work processes, as well as its value to the organization.

The review team appreciates the cooperation, time, and candid feedback of executive leadership, key stakeholders, and the internal audit staff.

The purpose of the review team's work was to provide an opinion on the effectiveness and quality of Virginia Tech's internal audit (IA) function. In particular, the review team focused on assessing IA's role in the areas of:

- > Internal Audit
- > Compliance
- > Enterprise Risk Management

These three areas are intrinsically linked in organizations with highly developed and effective internal audit functions, enabling IA to identify and assess the key risks within an organization and the organization's response to mitigate these risks.

The IIA's *Quality Assessment Manual* suggests a scale of three ratings, "generally conforms," "partially conforms," and "does not conform." "Generally conforms" is the top rating and means that an IA activity has a charter, policies, and processes that are judged to be in conformance with the *Standards*. "Partially conforms" means deficiencies in practice are noted that are judged to deviate from the *Standards*, but these deficiencies did not preclude the IA activity from performing its responsibilities in an acceptable manner. "Does not conform" means deficiencies are judged to be so significant as to seriously impair or preclude the IA activity from performing adequately in all or in significant areas of its responsibilities.

We conclude that the IA function **"generally conforms"** with the *Institute of Internal Auditors International Standards for the Professional Practice of Internal Auditing*, the highest rating. Overall, IA has established a strong foundation of alignment to the *Standards* and a history of solid work performed. The review team completed its assessment through a site visit the week of May 2, 2016, and review of documentation made available both prior to and during the site visit. A detailed evaluation of internal audit's conformance to the individual standards is included in **Appendix A**.

Strengths

During our review we noted the following strengths for the internal audit function at Virginia Tech:

- > **Viewed as trusted, valued, professional, candid, and collaborative:** Stakeholders appreciate the collaborative approach that internal audit uses in how they plan for, perform, and report on audits and advisory projects.
- > **Respected by Board and senior leaders:** Board and senior leaders value the services that internal audit provides and respect their positions on audit and risk-related matters.
- > **Strong organizational positioning of the IA function by the President and Board of Visitors:** The internal audit function is visible and has access to the highest levels of leadership within the organization. They are provided with appropriate platforms and are allocated the time necessary to keep leadership apprised on risk and internal control matters in the institution.
- > **Stakeholders' positive view of collaboration in annual audit planning process:** Internal audit takes an iterative approach to planning audit activities. Stakeholders appreciate how they are engaged throughout the planning process.
- > **Information Technology (IT) audit effectiveness:** Internal audit has been successful in demonstrating value and building relationships in their information technology audit and advisory activities.
- > **Raising of pertinent issues by IA:** Senior leadership views favorably IA's candid and respectful approach to raising concerns around issues that matter to the institution.

See **Appendix B** for key words captured via stakeholder interviews.



“People speak highly of Internal Audit”
-Senior leader



“The Director of Internal Audit does a great job; she is well-respected and her efforts are appreciated”
-Finance and Audit Committee Member



“Internal Audit achieves both quantity and quality in reporting”
-Senior leader



Opportunities for Enhancement

Internal Audit-Specific Observations

To leverage the current strength of IA and to position IA to take its impact to the next level, we note the following strategic opportunities:

1) **Audit Plan Composition and Approach**

While stakeholders view favorably the current construct of the IA five-year plan, IA can align the plan more strategically with top risks facing the institution by:

- > Employing a best practice of creating an annual plan with a short list of possibilities for future years in lieu of a five-year audit plan, as the risk landscape changes rapidly
- > Moving away from total coverage via rotation among departments and units to a more risk-based, forward-looking focus and emphasis on enterprise-wide risks
- > Evaluating how much of what IA currently does relates to compliance with policy and substitutes for management's monitoring; changing internal audit's emphasis to the risks within the area under audit
- > Clarifying the types of internal audit activities (e.g., risk-based, advisory, investigations)
- > Streamlining IA's follow-up on management's actions related to past IA recommendations

Internal Audit's Action Plan:

University Internal Audit leadership will improve the audit plan composition and approach as follows:

- > Reformatting the proposed 2016-17 audit plan, shared with the Board of Visitors at the June 2016 meeting, to focus on the current year projects while highlighting critical areas for core audit plan inclusion. As a result, the five-year audit plan is no longer formalized within the document, as it served as a placeholder for future audit coverage.
- > Continuing to focus on providing risk-based assurance services with emphasis on enterprise-wide risks aligned with university senior leadership perspective. As the institution's understanding and focus on strategic risks evolves along with its enterprise risk management program, IA can continue to evolve its own plan and focus accordingly.
- > Evaluation of our approach to conducting compliance reviews of each senior management area identified that this effort comprises only 6 percent of our annual audit hours and utilizes cost-effective student employees, while providing practical hands-on experiential learning in line with our university mission. The separation of basic university compliance from more robust, risk-based audit project work was highlighted as a strength during previous quality assurance reviews and appears to work well within the university community.
- > Monitoring project classification during engagements as parameters to ensure appropriate project classification in line with existing definitions as stipulated within our audit charter.
- > Evaluating the follow-up process in discussion with the Finance and Audit Committee of the Board of Visitors and senior leadership to determine whether they wish to rely on auditee's self-reporting completion of prior recommendations for low-priority items in lieu of independent validation, although our time spent on follow-up comprises less than 2 percent of overall effort.

2) Staff Development and Team Structure

IA can capitalize on the strength of the current team and enhance utilization of senior leader time by:

- > Increasing the visibility of IA leaders at the Board level, including providing non-director speaking parts
- > Positioning other experienced IA Department leaders to take primary day-to-day lead to relieve the IA director to focus on more strategic activities
- > Providing more day-to-day involvement by seasoned IA leaders in individual projects
- > Evolving "departmental turnover" to become "strategic rotation;" viewing the level of investment as benefiting the whole institution by cultivating talent
- > Streamlining supervisory structure and the number of reviews to increase reporting timeliness

Internal Audit's Action Plan:

University Internal Audit leadership will improve staff development and team structure as follows:

- > Increasing the visibility of IA leaders at the Board level, including providing non-director speaking parts.
- > Positioning other experienced IA department leaders to take primary day-to-day lead to relieve the IA director to focus on more strategic activities.
- > Continuing to empower more experienced staff to provide mentorship on individual projects, including a shift of supervision for student employees to a principal auditor to allow for less direct engagement from IA leadership.
- > Exploring ways to maximize the effectiveness of IA talent university-wide.
- > Exploring ways to streamline the report review process as part of ongoing continuous improvement efforts.

3) Strategic Alignment of Internal Audit Activities

IA can further enhance its fundamentally sound approach to executing internal audit activities by changing the following elements of its approach to performing audits and delivering advisory services to better position itself strategically within the organization and improve service delivery:

- > Evolving entrance conference and project planning process to focus energies within audit topics to be truly risk-based and to incorporate input of stakeholders
- > Enhancing project management and staging of report vetting process to allow adequate time for review with clients and avoid clustering of project completions just prior to board meetings
- > Aligning color coding of red/orange/yellow/green issues with management's understanding of risk and priority rating or eliminating the color coding to avoid confusion
- > Streamlining Board reporting to focus on the context of the enterprise risk-level issues and reflect alignment with management's views of risk

Internal Audit's Action Plan:

University Internal Audit leadership will enhance strategic alignment of audit services as follows:

- > Including strategic discussions with auditees in advance of the engagement to better incorporate input of stakeholders.
- > Continuing to focus on project management throughout the engagement to allow adequate time at various stages of review.

- > Evaluating the effectiveness of rating each issue in discussion with the Finance and Audit Committee of the Board of Visitors and university leadership, understanding the challenge that different perspectives will exist between auditors and the subject of the engagement and the current expectations of the governance structure for IA to assess the severity of issues.
- > In the absence of an enterprise risk management model at the university that would enhance the department's focus on specific risk areas, IA conducts an annual risk assessment with senior leadership and Board input and makes every effort to discuss with the Board the more significant risks and issues identified during audit engagements. During the few occasions where management's views of risk differed from IA, both perspectives are shared with senior leadership and the Board to fairly present the concern.

Institution-wide Considerations

Although our assessment was of the IA function, the IIA *Standards* require review teams to consider the intersection of IA activities with the risk management process and compliance activities across the institution.

1) Enterprise Risk Management (ERM) and Compliance Evolution

Every day at Virginia Tech, departments and individuals across the institution are managing risk and compliance. However, in the absence of an overlaying institutional risk management and compliance program, it is challenging to understand a comprehensive view of the many risk management activities that are occurring and for the Board to receive assurance that an effective risk management process is in place and overseen by management. Below we have laid out recommendations for enhancing ERM and compliance at Virginia Tech:

- > **Assess and define the structure, resources, and knowledge to support implementation**
Institutional readiness exists to formalize existing informal processes. Establishing an enterprise risk management process requires clear roles and responsibilities and an ongoing facilitation process.
- > **Collaborate to assess risks across silos**
Realizing the vision of "Beyond Boundaries" will involve breaking down barriers. Effective enterprise risk management can help to align institutional support and promote a leadership culture that considers risk and opportunity as part of day-to-day decision-making. For example, you can use an ERM construct to consider risks and opportunities related to establishing your envisioned "destination areas." Interdisciplinary collaboration presents both risk and opportunity. ERM can help to identify gaps among areas. Similar thought processes can be applied in standing up your new School of Medicine, expanding international programs, and managing cybersecurity and IT risk.
- > **Include an institutional compliance program in the ERM program**
Federal requirements for compliance programs include governing board and senior leader visibility to institutional approaches for managing compliance. As are many institutions of higher education, Virginia Tech is quite decentralized. Consider the need for an umbrella capability and role to span the decentralization, put a wrapper around what already exists, and provide transparency, consistent with your ERM plan to address compliance risk.
- > **Determine IA's involvement in ERM**
What is the role of IA in this initial ERM implementation stage and longer-term? Consider the intersection of risk, compliance, and IA activities, and how IA can continue to support the evolution of thinking at the institution. Involving IA in ERM will enhance the risk-based nature of IA's work and the degree of assurance provided to Board members and senior leaders.

> **Develop an ERM framework**

An array of successful ERM models exist within higher education. Someone must spearhead the development of a framework. This could be IA, a chief risk officer, general counsel, an executive vice president, an outside facilitator, or some combination thereof. Most critical is an individual's personality and stature as a convener, the ability to frame a vision and options, and the ability to think about risk in a broad sense, including strategic, operational, financial, and compliance. The individual must be empowered by the President and the Board, and provide facilitation and training for owners and managers of risk so that the institution is capable of embracing and carrying ERM forward. The next step is to identify risk owners (i.e., a few top institutional leaders) and assign responsibility to facilitate the development of an ERM framework to ensure that management carries forth with the plan.

Management's Action Plan:

Historically, risk management and compliance activities at Virginia Tech have been managed in a decentralized manner. Leadership sees value in understanding a comprehensive view of risk management at the university, and the President has requested the Vice President for Finance and Chief Financial Officer, University Counsel, and the Director of Internal Audit to explore and recommend the optimal solution for enterprise risk management at Virginia Tech. Several meetings have already occurred and this process is ongoing with plans for the initial phase to culminate with reporting a proposed ERM framework to the Board by the end of 2016.

2) Finance and Audit Committee

The Finance and Audit Committee charter notes responsibility for risk management and compliance oversight. We recommend that the audit focus of the Finance and Audit Committee's agendas evolve to include risk management and compliance topics and decrease the time spent on internal audit reports. Also, consider establishing an advisory group to the Finance and Audit Committee to focus on ERM.

Management's Action Plan:

The Finance and Audit Committee of the Board of Visitors had previously identified the need for further oversight for risk management and compliance activities and encouraged university leadership to determine the most appropriate means of periodically informing board members as to the status of identified risks and mitigation efforts in alignment with the committee's charter. The university will consider establishing an advisory group focused on ERM.

3) Institutional Commitment to Shifting IA's Focus

The current expectations of University Internal Audit include periodic coverage of departments, schools, and institutes on a rotational basis to assure compliance with Virginia Tech policy. Management may be overrelying on internal audit activities in place of its own control monitoring responsibilities with respect to compliance reviews. If IA is to move to a true risk-based model in preparing and executing its audit plan, management may need to assume more robust control monitoring. This change in IA's focus will need to be accepted institutionally by senior leadership and the Finance and Audit Committee of the Board of Visitors.

Management's Action Plan:

Senior leadership and the Finance and Audit Committee of the Board of Visitors will continue to provide feedback to IA on the content and focus of the audit plan in coordination with the emerging ERM program.

Appendix A: Evaluation of Conformance with IIA Standards



Candor. Insight. Results.

The table on the following pages details the review team's evaluation of the internal audit function's conformance with each element of the Standards, based on our external assessment of the internal audit function. The review team concluded that internal audit "generally conforms" with each individual standard. Overall opportunities for enhancement of the IA function were made; however, the review team did not identify any instances of non-conformance with the Standards.

Definitions

The assessment definitions are as follows:

- > **Generally Conforms (GC):** The internal audit activity has policies and processes that are judged to be in accordance with the *Standards*. This is the highest assessment rating possible. There may be opportunities for improvement, but these should not represent situations where the internal audit activity has not implemented the *Standards* or the Code of Ethics, has not applied them effectively, or has not achieved their stated objectives.
- > **Partially Conforms (PC):** Deficiencies in practice are noted that deviate from the *Standards*, but these deficiencies do not preclude the internal audit activity from performing its responsibilities in an acceptable manner. Some deficiencies may be beyond the control of the internal audit activity and may result in recommendations to senior management or the board of the organization.
- > **Does Not Conform (DNC):** Deficiencies in practice are so significant as to seriously impair or preclude the internal audit activity from performing adequately in all or in significant areas of responsibilities. For the internal audit activity overall, there will be deficiencies that will usually have a significant negative impact on the internal audit activity's effectiveness and its potential to add value to the organization. These may also represent significant opportunities for improvement, including actions by senior management or the board.

Appendix A: Evaluation of Conformance with IIA Standards



Candor. Insight. Results.

Quality Assessment Evaluation Summary—Overall Evaluation	GC	PC	DNC
OVERALL EVALUATION	✓		

Quality Assessment Evaluation Summary—Major/Supporting Standards		GC	PC	DNC
1000	Purpose, Authority, and Responsibility	✓		
	1010 Recognition of the Definition of Internal Auditing, the Code of Ethics, and the Standards in the Internal Audit Charter	✓		
1100	Independence and Objectivity	✓		
	1110 Organizational Independence	✓		
	1111 Direct Interaction with the Board	✓		
	1120 Individual Objectivity	✓		
	1130 Impairment to Independence or Objectivity	✓		
1200	Proficiency and Due Professional Care	✓		
	1210 Proficiency	✓		
	1220 Due Professional Care	✓		
	1230 Continuing Professional Development	✓		
1300	Quality Assurance and Improvement Program	✓		
	1310 Requirements of the Quality Assurance and Improvement Program	✓		
	1311 Internal Assessments	✓		
	1312 External Assessments	✓		
	1320 Reporting on the Quality Assurance and Improvement Program	✓		
	1321 Use of “Conforms with the International Standards for the Professional Practice of Internal Auditing”	✓		
	1322 Disclosure of Nonconformance	✓		
2000	Managing the Internal Audit Activity	✓		
	2010 Planning	✓		
	2020 Communication and Approval	✓		
	2030 Resource Management	✓		
	2040 Policies and Procedures	✓		
	2050 Coordination	✓		
	2060 Reporting to Senior Management and the Board	✓		
	2070 External Service Provider and Organizational Responsibility for Internal Auditing	✓		
2100	Nature of Work	✓		
	2110 Governance	✓		
	2120 Risk Management	✓		
	2130 Control	✓		
2200	Engagement Planning	✓		
	2201 Planning Considerations	✓		
	2210 Engagement Objectives	✓		
	2220 Engagement Scope	✓		
	2230 Engagement Resource Allocation	✓		

Appendix A: Evaluation of Conformance with IIA Standards



Candor. Insight. Results.

Quality Assessment Evaluation Summary—Major/Supporting Standards		GC	PC	DNC
	2240 Engagement Work Program	✓		
2300	Performing the Engagement	✓		
	2310 Identifying Information	✓		
	2320 Analysis and Evaluation	✓		
	2330 Documenting Information	✓		
	2340 Engagement Supervision	✓		
2400	Communicating Results	✓		
	2410 Criteria for Communicating	✓		
	2420 Quality of Communications	✓		
	2421 Errors and Omissions	✓		
	2430 Use of “Conducted in Conformance with the International Standards for the Professional Practice of Internal Auditing”	✓		
	2431 Engagement Disclosure of Nonconformance	✓		
	2440 Disseminating Results	✓		
	2450 Overall Opinions	✓		
2500	Monitoring Progress	✓		
2600	Communicating the Acceptance of Risks	✓		
	The IIA’s Code of Ethics	✓		

Objectives and Scope

The purpose of the quality assessment review was to:

- > Assess the current performance of the internal audit activity against best practices for the internal audit function and provide recommendations for improving the operational efficiency and performance of the internal audit function
- > Evaluate the internal audit organizational structure and staffing
- > Examine the effectiveness of current internal audit techniques and methodology for testing controls at Virginia Tech and whether the use of the latest internal audit practices have been adopted
- > Assess the effectiveness in complying with applicable professional and/or regulatory audit standards including conformity to the Standards
- > Identify ways to enhance internal audit policies and practices at Virginia Tech
- > Evaluate internal audit reporting practices
- > Evaluate the overall effectiveness of the quality program in internal audit at Virginia Tech

Procedures

In completing our review, the independent review team:

- > Conducted interviews with over 42 individuals from positions across the University (see list in Appendix D); to understand their views of the current internal audit function in relation to strategic goals, major initiatives, and challenges;
- > Reviewed documentation, including but not limited to:
 - o Internal audit charter
 - o Recent internal audit plans
 - o Recent risk assessments
 - o Departmental policies and procedures
 - o Staff training plans and qualifications
 - o Reports to the Finance and Audit Committee of the Board of Visitors
 - o Sample internal audit reports
 - o Quality assurance and improvement plan (QAIP) documentation
- > Considered the current internal audit function in relation to the Standards promulgated by the IIA in the areas of:
 - o Structure and reporting relationships
 - o Charter
 - o Roles and responsibilities
 - o Degree of independence and objectivity
 - o Education, training, qualifications, and experience of personnel
- > Reviewed results of internal audit work paper reviews on six internal audit projects and two consulting projects completed over the past four years, validating the appropriateness and completeness of the internal assessment performed. The audits reviewed were:
 - o Audit No. 14-1162, Vice President for Student Affairs
 - o Audit No. 14-1157, IT: Windows Server Security

Appendix C: Work Performed



Candor. Insight. Results.

- Audit No. 15-1210, Vice President for Administration
 - Audit No. 14-1163, Conflicts of Interest and Commitment
 - Audit No. 16-1258, Office of the President
 - Audit No. 16-1246, The Inn at Virginia Tech and Skelton Conference Center (IVTSCC)
 - Equine Medical Center Consulting Project in 2014
 - Gift Accounting Consulting Project in 2015
- > Compared information gathered about the internal audit function to other institutions and leading practices

Board Members

Deborah Petrine, Rector of the Board of Visitors (BOV)
James “Jim” L. Chapman IV, Finance and Audit Committee Chair
Charles “C.T.” Hill, Finance and Audit Committee Member
Dennis H. Treacy, Finance and Audit Committee Member
Horacio Valeiras, Finance and Audit Committee Member

Executive and Senior Leadership

Timothy D. Sands, President
M. Dwight Shelton Jr., Vice President for Finance and Chief Financial Officer
Kenneth E. Miller, Assistant Vice President for Finance and Controller
Sherwood G. Wilson, Vice President for Administration
Lisa J. Wilkes, Associate Vice President for Administration
Scott F. Midkiff, Vice President for IT and Chief Information Officer
J. Scot Ransbottom, Chief of Staff to the Vice President for IT and Deputy Chief Information Officer
Randolph C. Marchany, University IT Security Officer
Charles D. Phlegar, Vice President for Advancement
Whit Babcock, Director of Athletics
Timothy S. Parker, Associate Athletic Director, Compliance
John E. Dooley, Chief Executive Officer, Virginia Tech Foundation, Inc.
Jack W. Finney, Vice Provost for Faculty Affairs
Kenneth S. Smith, Vice Provost for Resource Management and Institutional Effectiveness
Wanda Hankins Dean, Vice Provost for Enrollment and Degree Management
Patricia A. Perillo, Vice President for Student Affairs
Christopher G. Wise, Assistant Vice President for Student Affairs
Michael J. Friedlander, Vice President for Health Sciences and Technology
A. Jack Davis, Dean, College of Architecture and Urban Studies
David M. Moore, Associate Vice President for Research Compliance
John C. Rudd Jr., Associate Vice President for Sponsored Programs
Lauren J. Coble, Chief Operating Officer, Biocomplexity Institute
Mark A. Gess, Associate University Legal Counsel

University Internal Audit

Sharon M. Kurek, CPA, CFE, Director of Internal Audit
Brian J. Daniels, CIA, CISA, GCFA, Associate Director of Internal Audit
William G. Abplanalp, Audit Manager
Jonathan C. Teglas, Operations Manager and Assistant to the Director
Carolyn E. Fulk, CIA, CFE, CGAP, CRMA, Senior Auditor for Special Projects
James E. Gregory, CPA, CFE, Senior Fraud, Waste, and Abuse Audit Specialist
Michael A. Dean, CIA, CISA, CGAP, Senior IT Auditor
C. Aparna Yellapantula, Staff Auditor
Miranda C. Grove, CIA, Staff Auditor
Alisha M.J. Royal, Staff Auditor
Courtney D.H. Hughes, Staff Auditor
David J. Loverude, CPA, Staff Auditor
Jade J. Edwards, Graduate Assistant
Amanda F. Setcavage, Undergraduate Assistant

Appendix E: Independent Review Team Member Information



Candor. Insight. Results.

Raina Rose Tagle, CPA, CISA, CIA, Review Team Leader Partner and National Higher Education Consulting Practice Leader, Baker Tilly

Raina Rose Tagle is a Partner with Baker Tilly, an accounting and advisory firm with more than 3,000 personnel nationwide. Raina leads Baker Tilly's higher education and research institutions industry consulting practice, as well as its national risk and internal audit consulting services practice, which provides services in the areas of internal audit, financial and operational risk management, construction audit, fraud investigation, technology risk consulting, and organizational governance. In addition to her extensive work with higher education clients, Raina's practice serves the not-for-profit, government contracting, real estate, healthcare, and professional services industries. Raina started her career with Arthur Andersen. Prior to joining Baker Tilly, she led her own consulting practice that offered strategic planning facilitation, executive coaching, and organizational development for not-for-profits. Raina holds a bachelor of science in accounting from the Oklahoma State University. Her community involvement includes serving as the selection committee chair for the 2010 *Washington Post* Award for Excellence in Nonprofit Management. Raina presents at conferences of the Association of College and University Auditors, the National Council of University Research Administrators, and the National Association of College and University Business Officers, and has co-authored articles in *NCURA Magazine* and *Research Global*. Raina's clients include the University of California System, the University of North Carolina at Chapel Hill, University of Washington, University of Wisconsin System, Cornell University, Princeton University, Stanford University, University of Pennsylvania, Massachusetts Institute of Technology, Harvard, and Georgetown University.

Michael L. Somich, CPA, MBA Executive Director of Internal Audit, Risk, and Compliance, Duke University

Mike Somich is the Executive Director of Internal Audits at Duke University, responsible for all internal audit activities of the Duke University, Duke Management Company (DUMAC, LLC), and Duke Medicine. Mike manages the Institutional Ethics and Compliance program and facilitates the risk management process for Duke University. Mike also chairs the Conflict of Interest Advisory Committee and the Administrative Conflict of Interest Committee. He serves on the Executive Compliance Committee of DUHS, the Compliance Committee of the Duke University School of Medicine, the Executive Council of the Emergency Management Program, the Institutional Conflict of Interest Committee, and the Information Security Steering Committee. He also serves on the Advisory Board of the North Carolina State University Enterprise Risk Management Program. Mike has participated in three quality assurance review teams of peer institutions and is a frequent speaker at national meetings on the topics of compliance, risk management, and internal audit department operations. Prior to joining Duke University in November 2004, Mike had 31 years of experience specializing in hospital and related health care audits, most recently as a partner in the Deloitte & Touche accounting firm in Chicago, where he was a member of the firm's National Health Care Task Force.

Appendix E: Independent Review Team Member Information



Candor. Insight. Results.

Richard N. Cordova, CPA, MBA

Executive Director of Internal Audit, University of Washington

Richard Cordova is the Executive Director of Internal Audit at the University of Washington, and has led the expansion of the “scope” of work of the department to include the first audit of UW international operations overseas (I-Tech Africa) and to the newly acquired medical operations (Northwest Hospital & Valley Medical Center). Richard began his tenure at UW in July of 2009 and participates in a number of university-wide initiatives and committees, including acting as an advisor on the implementation of the new UW HR/Payroll System. Prior to joining the University of Washington, Richard worked for a year at Starbucks as the Director of Internal Audit assisting in the completion of their audit program, which included audits in Mexico, Costa Rica, and China as well as overseeing the completion of the Sarbanes Oxley Audit requirements. Richard also participated in the Starbucks QAR process, whereby Starbucks, Nike, and MGM Grand Hotels worked together to conduct QAR’s across each organization. Richard currently serves on the Internal Audit Committee of the Board of Directors for the Association of College and University Auditors (ACUA). Richard led the QAR team which conducted the review of the Oregon University System in 2011 and was a team member of the University of Virginia QAR in January 2015 and Texas Tech in June 2015. Richard obtained his Bachelors of Science from the University of Notre Dame and his MBA from the University of California, Irvine.

Pamela Doran, CPA, CIA, CISA, MBA

Executive Director of Audit & Advisory Services, University of South Carolina

Pam was named the Executive Director of Audit & Advisory Services at the University of South Carolina (USC) in January 2014. Previously, she served as Audit Director & Deputy University Auditor at Cornell University for 12 years, and spent 16 years in various finance, audit and IT positions at Eastman Kodak Company (when it was a Fortune 100 company). She holds the CPA, CIA and CISA certifications; as well as a Master’s degree in Business Administration and Bachelor’s degree in Accounting from Rochester Institute of Technology. Previous to Pam’s tenure at USC, she was the Audit Director and Deputy University Auditor at the Cornell University Audit Office. Cornell University is a privately endowed research university, a partner of the State University of New York, and the federal land-grant institution in New York State. As Audit Director of the Ithaca campus, she was responsible for the operational, compliance, and financial audits for the campus. She collaborated closely with and led the team of Audit Directors including the IT Audit Director and the Weill Cornell Medical College Audit Director. Pam has been an active member of the Association of College and University Auditors (ACUA) for over 14 years; she currently holds the Vice President position. Pam is also a member of the American Institute of Certified Public Accountants (AICPA), Institute of Internal Auditors (IIA), ISACA, Palmetto Chapter of the IIA, and the South Carolina Society of CPA’s. She has furthered the awareness of the internal audit profession by serving on the planning committee for a Chapter of the Eastern Association of College and University Business Officers and presenting at various conferences and events including ACUA, the National Council of University Research Administrators (NCURA) annual conference and local IIA chapter events.

Appendix E: Independent Review Team Member Information



Candor. Insight. Results.

John Kiss, CPA, CFE,

Senior Manager, Higher Education Internal Audit Consulting Practice, Baker Tilly

John Kiss is a Senior Manager with Baker Tilly's Risk and Internal Audit Consulting and Higher Education practices with over twelve years of experience. Serving primarily research institutions, academic medical centers, and not-for-profit organizations, John works with clients to provide internal audit, financial and operational risk management, fraud investigation, organizational governance, and other assurance services. John participated in the Quality Assessment Review process for two leading research institutions, while also assisting a university in preparing its own Self-Assessment according to the *IIA Standards*. He routinely develops and leads trainings and presentations focused on internal audit, risk management, and compliance specifically targeted to higher education and not-for-profit institutions. John holds a Bachelor of Science in Information Systems Management and a Masters in Accountancy from Wake Forest University. He is a Certified Public Accountant (CPA) and Certified Fraud Examiner (CFE). John's clients include The Brookings Institution, The Catholic University of America, The Chartered Financial Analyst Institute, George Washington University, Georgetown University, Howard University, Marquette University, Princeton University, and Stanford University.

Update of Responses to Open Internal Audit Comments

FINANCE AND AUDIT COMMITTEE

June 30, 2016

As part of the internal audit process, university management participates in the opening and closing conferences and receives copies of all Internal Audit final 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, Internal Audit performs a follow-up visit within two weeks after the target implementation date. Internal Audit 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 Finance and Audit 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 high or medium 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 2016 reflects closing 38 of 38 recommendations by the original target date.

The report presented at the June 6, 2016 meeting covered Internal Audit reports reviewed and accepted through March 31, 2016 and included 24 open medium and high priority recommendations. Activity for the quarter ended June 30, 2016 resulted in the following:

Open recommendations as of March 31, 2016	24
Add: Medium & High priority recommendations accepted June 6, 2016	6
Subtract: recommendations addressed since March 31, 2016	16
Remaining open recommendations as of June 30, 2016	<u>14</u>

While this report is prepared as of the end of the quarter, management continues to receive updates from Internal Audit regarding auditee progress on action plans. Through July 29, 2016 Internal Audit has closed one of the 14 outstanding medium and high priority recommendations for an adjusted total of 13 open recommendations. The remaining open recommendations are progressing as expected and are on track to meet their respective target due dates. Management continues to work jointly with the units and providing assistance as needed to ensure the action plans are completed timely.

ATTACHMENT A

Open Recommendations by Priority Level

FINANCE AND AUDIT COMMITTEE

June 30, 2016

Report Date	Audit Name	Audit Number	Total Recommendations						
			ISSUED	COMPLETED	OPEN				
					Extended		On-schedule		Total
					High	Medium	High	Medium	Open
05-Mar-15	Conflicts of Interest and Commitment	14-1163	3	1			2		2
14-Oct-15	Language and Culture Institute	15-1221	1					1	1
22-Oct-15	Facilities Operations	15-1206	2	1				1	1
23-Feb-16	The Inn at Virginia Tech and Skelton Conference Center	16-1246	3	2				1	1
02-Mar-16	Linux Server Security	16-1238	13	9			4		4
10-May-16	Electrical and Computer Engineering	16-1256	2					2	2
11-May-16	Building Construction / Myers-Lawson School of Construction	16-1261	1				1		1
13-May-16	Institute for Critical Technology and Applied Science	16-1255	2					2	2
Totals:			27	13	0	0	7	7	14

ATTACHMENT B

Internal Audit Open Recommendations

FINANCE AND AUDIT COMMITTEE

June 30, 2016

Report Date	Item	Audit Number	Audit Name	Recommendation Name	Priority		Target Date		Follow Up Status	Status of Recommendations with Revised Priority / Target Dates
					Original	Revised	Original	Revised		
02-Mar-16	1	16-1238	Linux Server Security	Unix Administrative Services - Change Management	High		01-Jul-16		1	
23-Feb-16	2	16-1246	The Inn at Virginia Tech and Skelton Conference Center	Effective Employee Training Plans	Medium		29-Jul-16		1	
22-Oct-15	3	15-1206	Facilities Operations	Monitoring of Safety Training	Medium		31-Jul-16		1	
02-Mar-16	4	16-1238	Linux Server Security	Control Environment for Linux Servers	High		31-Jul-16		1	
02-Mar-16	5	16-1238	Linux Server Security	Password Policy	High		31-Jul-16		1	
14-Oct-15	6	15-1221	Language and Culture Institute	Accuracy of LCI Tuition and Fee Charges	Medium		01-Sep-16		1	
10-May-16	7	16-1256	Electrical and Computer Engineering	Financial Oversight of Sponsored Research	Medium		01-Sep-16		1	
10-May-16	8	16-1256	Electrical and Computer Engineering	Untimely Service Center Billing	Medium		01-Sep-16		1	
11-May-16	9	16-1261	Building Construction / Myers-Lawson School of Construction	Health and Safety	High		15-Sep-16		1	
05-Mar-15	10	14-1163	Conflicts of Interest and Commitment	Conflict of Interest Programmatic Enhancement	High		30-Sep-16		1	
05-Mar-15	11	14-1163	Conflicts of Interest and Commitment	Clarification of Conflict of Interest Officer Role and Disclosure Requirements	High		30-Sep-16		1	
13-May-16	12	16-1255	Institute for Critical Technology and Applied Science	Awarding and Oversight of Investments	Medium		30-Sep-16		1	
02-Mar-16	13	16-1238	Linux Server Security	Logging - Geosciences	High		01-Oct-16		2	
13-May-16	14	16-1255	Institute for Critical Technology and Applied Science	Lab Safety Training and Oversight	Medium		15-Dec-16		2	

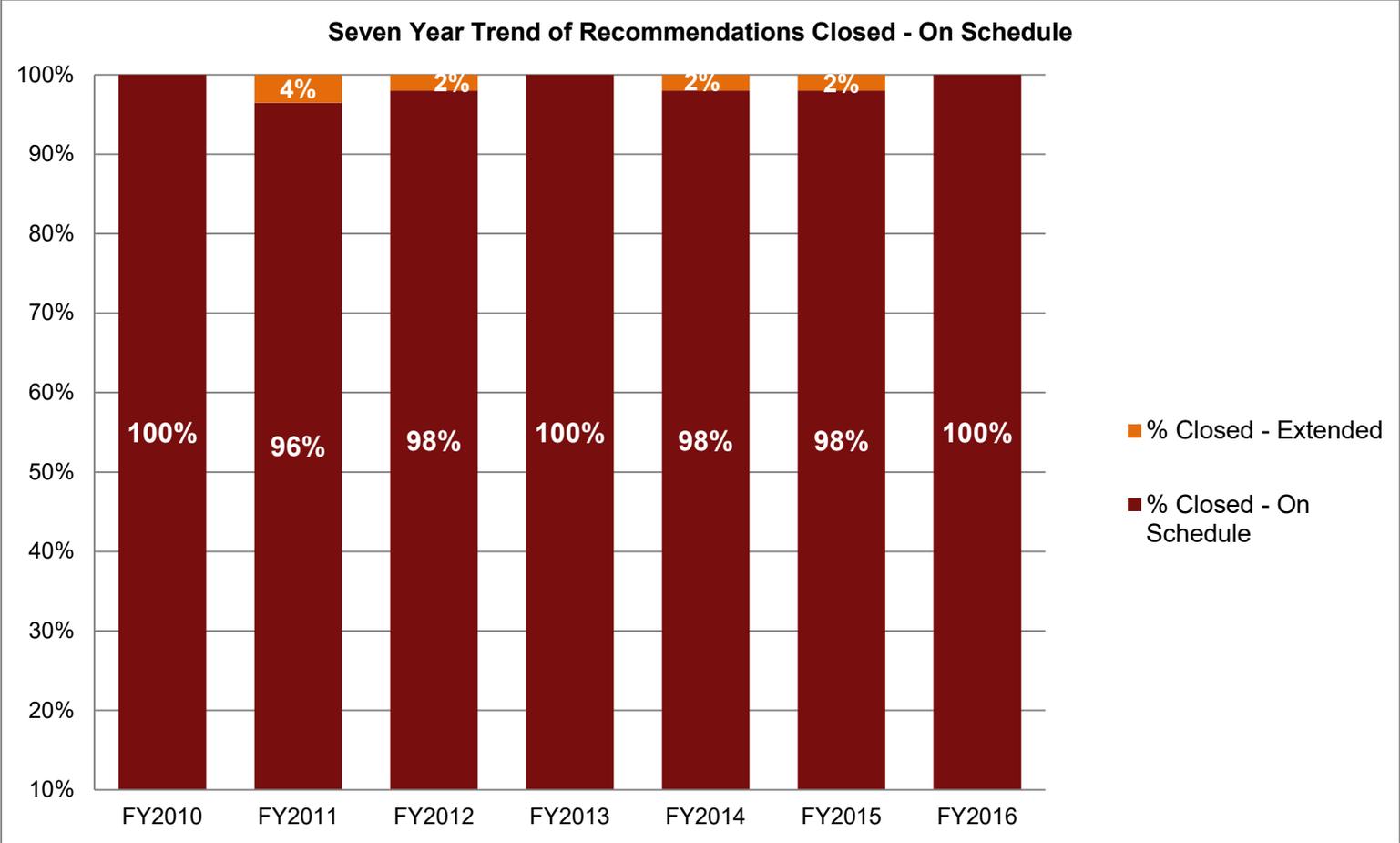
- (1) As of June 30, 2016, management confirmed during follow up discussions with Internal Audit that actions are occurring and the target date will be met. The Internal Audit department will conduct testing after the due date to confirm that the Management Action Plan is implemented in accordance with the recommendations.
- (2) 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.

ATTACHMENT C

Management Performance and Trends Regarding Internal Audit Recommendations

FINANCE AND AUDIT COMMITTEE

June 30, 2016



University Internal Audit Annual Status Report for the Fiscal Year Ended June 30, 2016

FINANCE AND AUDIT COMMITTEE

August 16, 2016

Mission Statement – Scope of Work

The mission of University Internal Audit at Virginia Tech is to provide independent, objective assurance and advisory services designed to add value and improve the university's operations. Additionally, University Internal Audit helps university departments accomplish their objectives by bringing a systematic, disciplined approach to the identification of opportunities for improvement in the areas of risk management, internal control, efficiency, policy, and procedure.

Internal audit coverage encompasses reviews of all university operations and activities to appraise:

- the accuracy, reliability, and timeliness of significant financial, managerial, and operating information and the adequacy of the internal controls employed over the compilation and reporting of such information;
- compliance with policies, procedures, standards, laws, and regulations;
- appropriate identification and management of risk;
- measures taken to safeguard assets, including tests of existence and ownership;
- the adequacy, propriety, and cost-effectiveness of accounting, financial, and other controls throughout the university, as well as compliance therewith;
- measures taken to foster continuous improvement in control processes;
- whether university resources are being acquired, managed, and protected in an economical, efficient, and effective manner; and
- the achievement of programs, plans, and objectives.

University Internal Audit reports functionally to the Finance and Audit Committee of the Board of Visitors. For day-to-day operations, the Director of Internal Audit reports administratively to the President.

Executive Summary – State of Control Environment

The university'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 2015-16, University Internal Audit 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 service, and investigation work performed during fiscal year 2015-16, no deficiencies representing material control weaknesses were identified; however, a number of areas requiring improvement were noted. The scope of audit work

was not limited in any way by management or others, nor were there any instances where University Internal Audit 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, open and cooperative, and supportive of audit efforts. Management has generally accepted audit findings and responded by developing action plans that address the concerns included in report recommendations.

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 service, and investigation work performed during fiscal year 2015-16, University Internal Audit did not identify any areas where management decided to accept a level of risk that we believed to be unacceptable.

Summary Observations – Audit Program

Audits were performed in accordance with the fiscal year 2015-16 annual audit plan at a level consistent with the resources of University Internal Audit. Twenty-nine audit projects on the fiscal year 2015-16 audit plan were completed. During the fiscal year, six additional projects were added to the audit plan at management’s request.

Due to personnel turnover, the risk-based audits of International Activities, Physics, Student Engagement and Campus Life, University Scholarships and Financial Aid, IT: Printer Security, and IT: Network Security (RLAN, Routers, and Firewalls) were cancelled on this year’s audit plan and were reconsidered for inclusion on next year’s audit plan. Five audit projects were completed since the June board meeting.

For fiscal year 2015-16, University Internal Audit completed 91 percent of its audit plan as depicted in Exhibit 1. Three risk-based audits (Construction Management, Departmental Scholarships, and IT: Project Management) are currently underway. These projects will be carried forward into fiscal year 2016-17.

Exhibit 1 FY 2015-16 Completion of Audit Plan

Audits	
Total # of Audits Planned	28
Total # of Supplemental Audits	6
Total # of Carry Forwards	4
Total # of Planned Audits Canceled and/or Deferred	6
Total Audits in Plan as Amended	32
Total Audits Completed	29
Audits - Percentage Complete	91%
Note: Includes Compliance and Advisory Reviews	

Exhibit 2 displays the distribution of direct audit hours (72%) by category. The indirect hours for administration, computer/network support, training, and compensated absence hours (28%) are not included in this chart.

Exhibit 2
FY 2015-16 Distribution of Direct Audit Hours

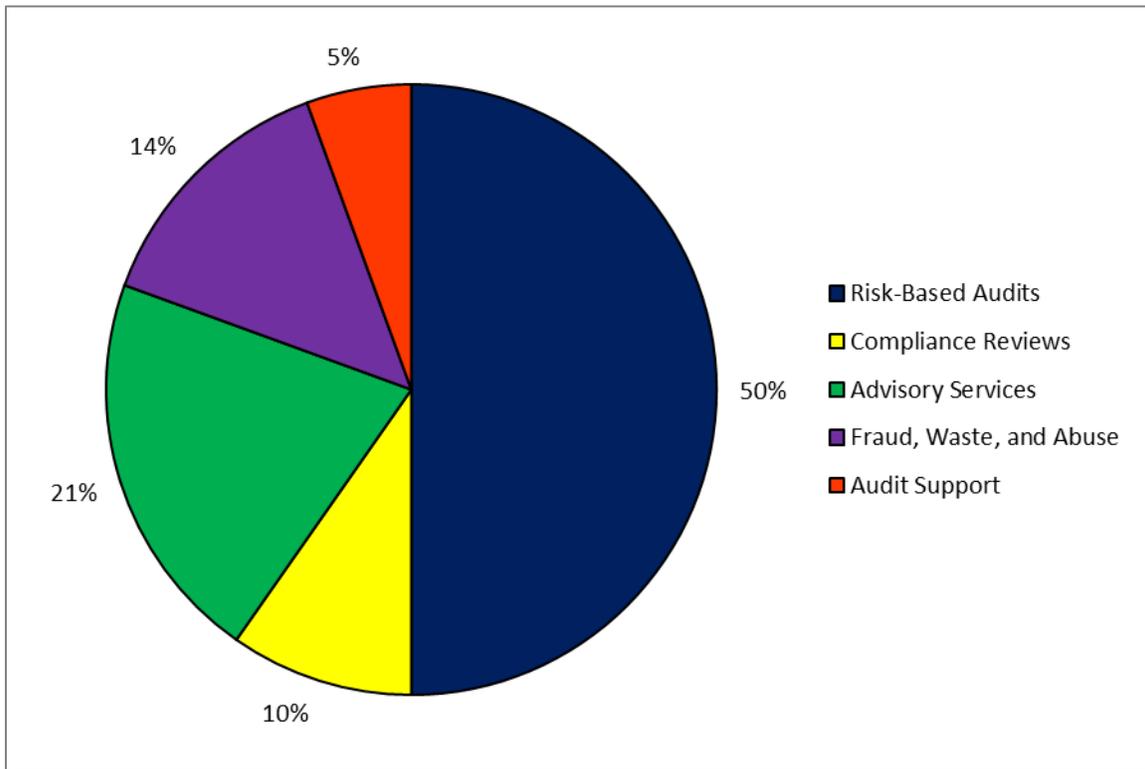


Exhibit 3 illustrates the difference between actual and planned hours during fiscal year 2015-16. The department filled a new position as well as two position vacancies resulting in increased effort during the fiscal year in the indirect categories as the newly hired individuals were trained to understand university policies and the methods utilized by the department to conduct, review, and/or report the varying types of projects.

The overall effort spent on fraud, waste, and abuse investigations exceeded planned hours as the number of cases received increased from projections based on historical tendencies. Furthermore, audit support hours were less than planned as related tasks were assumed by the leadership team to maximize the continued availability of staff to complete audit projects.

**Exhibit 3
FY 2015-16 Actual vs. Planned Hours**

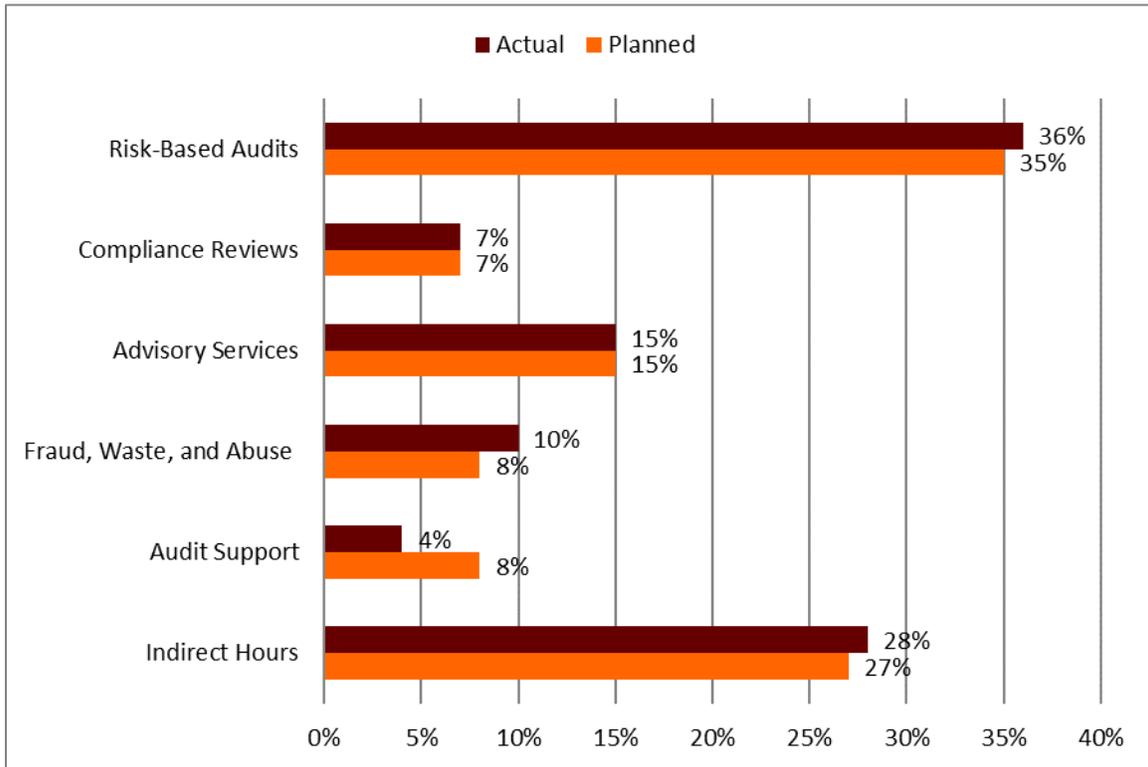


Exhibit 4 below displays the status of the fiscal year 2015-16 audit plan as amended. All compliance review projects were completed, while three risk-based audits are in progress and will be carried forward to the fiscal year 2016-17 audit plan.

**Exhibit 4
FY 2015-16 Audit Plan Status**

Audit Project	Risk Ranking	BOV Mtg
Risk-Based Audit		
Athletics NCAA Compliance *	High	Aug-16
Construction Management	High	<i>Carry Forward</i>
Contract Administration	High	Mar-16
Controller's Office – General Accounting	High	Nov-15
Crop and Soil Environmental Sciences	High	Mar-16
Departmental Scholarships	High	<i>Carry Forward</i>
Electrical and Computer Engineering	High	Jun-16
Facilities Operations	High	Nov-15
Human Resources: Leave Accounting *	High	Aug-16
International Activities	High	<i>Deferred</i>
IT: Linux Server Security	High	Mar-16

Audit Project	Risk Ranking	BOV Mtg
IT: Network Security (RLAN, Routers, and Firewalls)	High	<i>Deferred</i>
IT: Printer Security	High	<i>Deferred</i>
IT: Project Management	High	<i>Carry Forward</i>
Physics	High	<i>Deferred</i>
Real Estate Management	High	Mar-16
Research: Effort Reporting *	High	Jun-16
The Inn at Virginia Tech and Skelton Conference Center	High	Mar-16
University Scholarships and Financial Aid *	High	<i>Deferred</i>
Graduate Admissions Application System	Medium	Aug-16
Institute for Critical Technology and Applied Science	Medium	Jun-16
Language and Culture Institute	Medium	Nov-15
Student Engagement and Campus Life	Medium	<i>Deferred</i>
Building Construction / Myers–Lawson School of Construction	Low	Jun-16
Center for Organizational and Technological Advancement	Low	Mar-16
Interdisciplinary Center for Applied Mathematics / Institute for Society, Culture and Environment	Low	Aug-16
Compliance Reviews		
National Capital Region		Nov-15
Office of the President		Mar-16
University Libraries		Jun-16
Office of the Executive Vice President and Provost		Aug-16
* <i>Annual Audit on Different Components</i>		

Additionally, University Internal Audit responded to management’s requests for advisory services and consultative guidance including the following areas:

- Advancement: A review of the organizational structures of administrative functions within the Advancement division.
- Athletic Camps and Clinics: A review to analyze the administrative oversight of camps and clinics affiliated with the Department of Athletics (Athletics) and to explore whether camps and clinics should remain private entities or be integrated into Athletics.
- Research and Innovation: A review of the organizational structures of administrative functions within the Research and Innovation division.
- Veterinary Teaching Hospital: A review to analyze associated business process efficiencies within the Veterinary Teaching Hospital. Due to the nature of management’s request, the review was referred to the Office of Capital Assets and Financial Management for conclusion.
- University Legal Counsel requested two reviews to be conducted under attorney-client work product.

- Virginia FFA Student Account: A review of the Virginia Future Farmers of America (Virginia FFA) student account overseen by the Department of Agricultural, Leadership, and Community Education (ALCE) within the College of Agriculture and Life Sciences (CALs) at Virginia Tech. The objective of this review was to determine whether operating parameters resulted in appropriate use of Virginia FFA student account resources.
- Washington-Alexandria Architecture Center (WAAC): A review to determine WAAC's compliance with university policies and procedures, specifically related to its financial operations including funds handling activity although the scope expanded significantly as result of conditions identified during the project. Necessitating in excess of 2,000 effort hours, the review required dedication of extensive onsite and remotely-applied effort, involved frequent communication with multiple central university offices as well as several external agencies.

Management Corrective Actions (MCAs)

University Internal Audit conducts follow-up on management's implementation of agreed upon improvements for dozens of previously issued audit recommendations. Each audit recommendation and its associated MCA is given a rating of high, medium, or low priority by the auditors and management; however, if a central administration or university-wide MCA is identified, no rating is attached. 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 found. A primary objective of this classification is to drive a greater sense of urgency in completing the corrective action and completion of audit follow-up. The Finance and Audit Committee receives the higher priority recommendations and associated MCAs. However, University Internal Audit and management closely monitor all outstanding recommendations to ensure they are adequately addressed by the responsible parties.

Of the 91 MCAs generated during audits issued in fiscal year 2015-16, University Internal Audit categorized 14 as high priority (15%). High-priority MCAs would 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 MCAs at fiscal year-end have been outstanding an average of 208 days and are on track for completion. Audits for fiscal year 2015-16 resulted in recommendations with ratings of high, medium, or low MCAs as follows:

Exhibit 5 Inventory of MCAs

Beginning # of MCAs	39
MCAs added	91
MCAs closed	<u>84</u>
Current open inventory of MCAs	46

Note: The open inventory above includes 13 open MCAs from the reports presented to the Finance and Audit Committee at the August 29, 2016 meeting. Additionally, 21 of the 46 open MCAs are categorized as either low-priority recommendations, recommendations resulting from advisory service reviews, or observations for central administration identified during audits that are excluded from status reports of previously issued recommendations shared with the Finance and Audit Committee.

Cost Containment and Revenue Enhancement Recommendations

University Internal Audit emphasized the identification of cost containment and revenue enhancement strategies in the performance of audit activities. University Internal Audit issued the following recommendations to management to assist with cost containment or revenue enhancement strategies:

- Contract Administration - Inappropriate advance payments were executed by the University Libraries, with \$260,659 in expenditures during the scope period. The University Libraries made four advance prepayments totaling \$870,000 since April 2012, including a \$200,000 deposit during the scope period (April 2015) that was processed by Accounts Payable, for an online subscription that contractually required payments within 30 days after receipt of the invoice. Limiting the use of advance prepayments for vendor services, especially when the contract does not require this approach, will minimize advance prepayment of university funds will reduce the potential for monetary loss in the case of contract failure with the vendor and ensure that the university is aligned with the terms and conditions of the contract and university procedures. A recommendation was made to both the responsible department and the Controller's Office to improve the payment process.
- Facilities Operations – Separation of duties within the Facilities Storeroom was inadequate with respect to record keeping, inventory custody, and physical inventory as required, and no secondary management review existed to mitigate the associated risk of combined duties for inventory comprised of 2,130 items valued at \$163,264 based on the most recent purchase price within the Facilities Storeroom at the end of July 2015. Additionally, one individual had the ability to revise inventory specifications and make adjustments within HokieServ without management approval as required by policy. Despite the voluminous and dynamic environment of the storeroom, no shortages or overages were identified during the physical counts conducted by the Facilities Storeroom employees during the period. In addition to requiring management approval for inventory adjustments, establishing appropriate separation of duties for record keeping, inventory custody, and physical inventory as required for the Facilities Storeroom will strengthen the control environment, reduce the likelihood of misappropriation of assets, and protect employees from allegations of theft or wrongdoing. A recommendation was made to improve the inventory control process.
- The Inn at Virginia Tech and Skelton Conference Center – There was no consistent process in place to ensure the accuracy of inventory counts. The inventory process did not facilitate accurate tracking of assets, namely food and alcohol, and was a point-in-time count that was subject to human error. The monthly inventory

for the review period averaged \$81,110. While unusual fluctuations of month-to-month inventory were flagged for review, inventory counts were not reconciled to sales or inventory purchases that occurred during the month. Furthermore, the inventory process did not always incorporate proper separation of duties for the processes related to record keeping, inventory custody, and physical inventory. Properly tracking inventory, including purchases and sales, would allow IVTSCC to maximize revenue by controlling food and alcohol costs. It will allow for greater efficiency and the ability to better manage ordering and waste prevention. In addition, an effective inventory process will help reduce shrinkage and minimize the potential for fraud.

- The Inn at Virginia Tech and Skelton Conference Center – Accurate charges or correct coding of event charges was not entered within the hotel management software suite, as 60 of 80 (75%) events reviewed contained at least one charge that was incorrectly coded, and two events were undercharged a total of \$2,837. The controls in place to identify missed or incorrect charges were ineffective regarding the miscoding of such charges. For the \$1,355,288 in total charges reviewed, \$653,064 (48%) were fully miscoded. Correctly allocating banquet charges would help ensure accurate customer charges and effectively report earnings and total guests served each month. A recommendation was made to improve the accuracy and proper coding of their banquet charges.
- Facilities Operations – Various trade departments made purchases utilizing hardware store retail prices instead of contracted prices. Nine of ten invoices reviewed, totaling \$7,391, from a local hardware store would have been valued at \$5,268 under contract pricing, resulting in a cost savings of \$2,123. Management indicated that these nine invoices were not emergency situations requiring immediate purchase. Utilizing contract prices with current vendors will ensure the best price available for the purchase of hardware goods. A recommendation was made to improve procurement processes by communicating to employees on utilization of contract prices with current vendors.
- Language and Culture Institute (LCI) - LCI did not always ensure correct charging of tuition and fees based on student enrollment. Thirteen of 1,808 (0.7%) student entries reviewed were incorrectly charged, ranging from \$100 to \$4,583. These incorrect charges totaled \$8,290 in overcharges and \$5,883 in undercharges, totaling \$14,173 of gross incorrect charges out of \$6.5 million in charges overall for the scope period. A majority of these errors occurred with regard to elective courses. Correctly charging tuition and fees would allow LCI to maximize revenue, accurately report their earnings each term, and ensure fair and consistent treatment of all students in the program. A recommendation was made to pursue methods to ensure appropriate calculation and charging of LCI student tuition and fees in Banner based on their enrollment.
- Compliance Reviews – University Internal Audit issued recommendations in one compliance review related to improving the accuracy of leave and overtime compensation calculations that had resulted in overcompensating employees. Additionally, a recommendation was issued related to improving compliance with university policy and procedure governing purchases made that were unrelated to

business operations and used Educational and General funds, an inappropriate fund source for the identified transactions.

Recurring Audit Recommendations

The same or similar recommendations noted below were identified in multiple audit reports issued in fiscal year 2015-16. The data in Exhibit 6 will be shared with leadership in the appropriate administrative departments so that they can establish education and/or monitoring programs that will reduce the recurrence of these issues in future years.

**Exhibit 6
Recurring Audit Recommendations**

Recommendation	Occurrences	Audits
IT: Security	22	Graduate Admissions Application System Linux Server Security (21)
Documentation and Communication of Policies and Procedures	8	Center for Organizational & Technological Adv. Contract Administration Facilities Operations Graduate Admissions Application System (2) Institute for Critical Technology & Applied Science Linux Server Security Real Estate Management
Process Improvements	5	Facilities Operations Human Resources: Leave Accounting (3) Institute for Critical Technology & Applied Science
Fiscal Responsibility	4	Building Construction/School of Construction Electrical and Computer Engineering Graduate Admissions Application System Office of the President
Health and Safety Training	4	Building Construction/School of Construction Facilities Operations Institute for Critical Technology & Applied Science The Inn at VT and Skelton Conference Center
Conflicts of Interest and Commitment	3	Athletics NCAA Compliance Facilities Operations Office of the Executive Vice President and Provost
Inventory Management	3	Facilities Operations (2) The Inn at VT and Skelton Conference Center
Billing and Accounts Receivable	3	Electrical and Computer Engineering Language and Culture Institute The Inn at VT and Skelton Conference Center

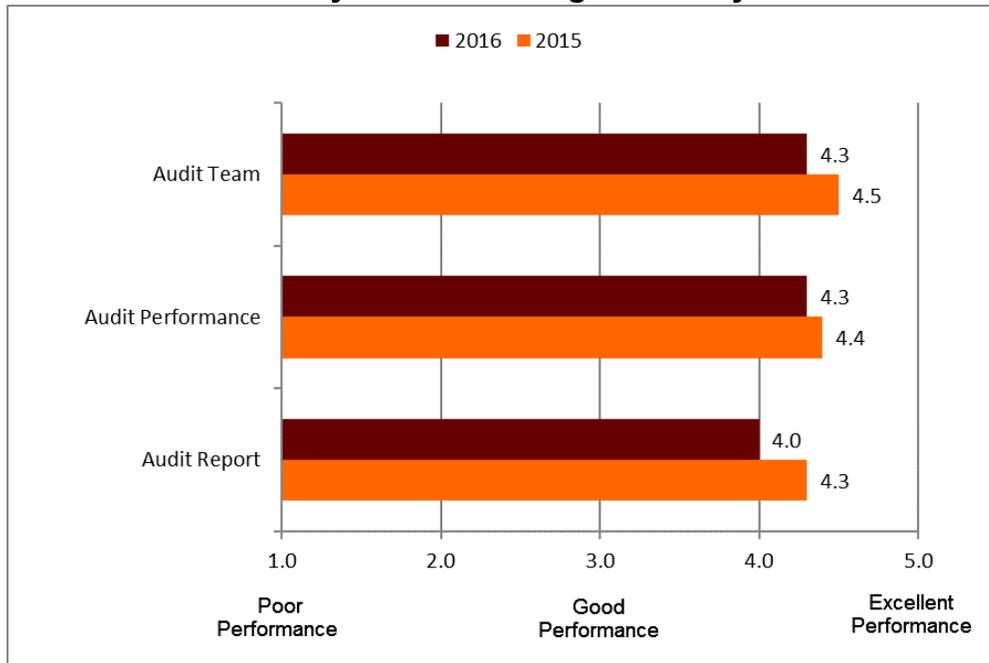
Results of Surveys for Evaluating University Internal Audit Services

Each audit and compliance review management contact is emailed a link to an online survey requesting their assistance in evaluating the quality of audit services provided by University Internal Audit. Feedback from the surveys is used to enhance the overall

quality of university audits. The survey responses are grouped into three categories focused on the following areas:

- Audit Team Demonstrated technical proficiency, approached audit with objective and professional manner, and conclusions and opinions were logical;
- Audit Performance Discussed the preliminary audit objectives, scope, and timing of the audit, management concerns and suggestions were solicited and considered in the audit, and disruption of daily activities was minimized as much as possible during the audit;
- Audit Report Written clearly and contained adequate explanations for the observations, and recommendations improved or added value to the department's operation.

Exhibit 7
Results of FY 2015-16 Surveys for Evaluating University Internal Audit Services



Overall customer ratings were highly favorable as overall results fell between excellent and good performance. Attaining a cumulative average score of 4.2 on a 5-point scale exceeded University Internal Audit's goal of a 4.0 rating on survey feedback. While the audit report rating met the goal of 4.0, further analysis found that lower response ratings were attributable to management dissatisfaction with audit report content particularly when challenging issues arose. Comments provided by clients showed appreciation of the audit process, the communication during the audit, and/or the courtesy, professionalism, and thoroughness demonstrated by the audit team. One respondent requested more detailed information be included in future audit reports to highlight positive aspects of the engagement. Another noted that engagements could be strategically aligned to improve efficiency. Additional respondents expressed

appreciation that audit work confirmed challenges previously identified by management and helped to validate the need for improvement within their organization.

Fraud Waste and Abuse

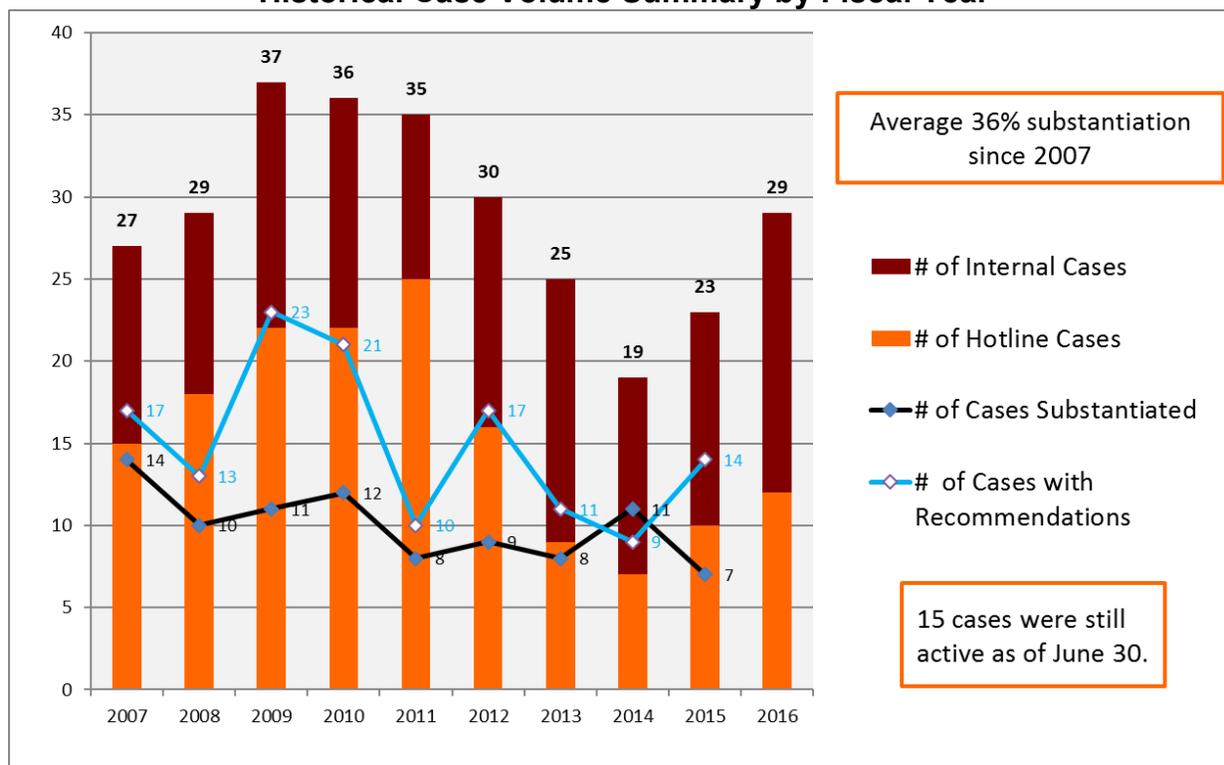
University Internal Audit conducts reviews of all state hotline and internal complaints alleging fraud, waste, and abuse. During fiscal year 2015-16, University Internal Audit received 29 cases, 12 state hotline and 17 internal complaints. Fourteen cases from fiscal year 2015-16 were closed, along with 10 cases from prior fiscal years. For the 24 cases completed, 2 of the 12 (17%) state hotline cases were substantiated and 7 of 12 (58%) internally reported cases were substantiated. While approximately 53 percent of internally reported fraud, waste, and abuse allegations have historically been substantiated, only 20 percent of state hotline cases have historically been substantiated for a combined average of 36 percent over the past 10 years.

University Internal Audit makes recommendations of improvements related to business practices, communication, and management that improve the overall operating environment of the university. Historically for the past 10 years, University Internal Audit made recommendations in 87 percent of substantiated cases. In cases where there is insufficient evidence to demonstrate fraud, waste, and/or abuse, University Internal Audit still made recommendations in 35 percent of cases. Overall, on average, University Internal Audit made recommendations in 50 percent of cases.

The number of reported cases rose this year, consistent with levels experienced during typical non-recessionary periods. Since fiscal year 2006-07, over 70 percent of the allegations investigated by University Internal Audit fall within five general categories: leave or time abuse, improper use of university resources, abuse of authority, misfeasance and waste, or theft or embezzlement.

Exhibit 8 displays the number of fraud, waste, and abuse reviews performed for hotline and internal complaints for fiscal years 2006-07 through 2015-16, the number of substantiated cases, and the number of cases with recommendations for management.

**Exhibit 8
Fraud, Waste, and Abuse
Historical Case Volume Summary by Fiscal Year**



Quality Assurance and Improvement Program

A comprehensive Quality Assurance and Improvement Program of the university’s internal audit function is maintained in accordance with requirements set forth by the Institute of Internal Auditors’ (IIA) International Standards for the Professional Practice of Internal Auditing (Standards). This program includes ongoing internal assessments, periodic self-assessments, and an independent external assessment that should be conducted at a minimum of every five years.

Periodic Self-Assessment

The periodic self-assessment, completed in February 2016 and presented to the Finance and Audit Committee of the Board of Visitors in March 2016, was designed to assess conformance with the IIA Standards, evaluate the effectiveness of the university’s internal audit function in carrying out its mission, and to identify strengths and opportunities for improvement of its overall management and work processes. The self-assessment determined that the university’s internal audit function generally conforms with the IIA Standards, which is the highest rating.

During the self-assessment, opportunities were identified to enhance office processes and procedures. Those opportunities included: enhancing onboarding procedures for new staff, adjusting the timing of QAIP reviews for maximum value, completing the update of office policies and procedures, ensuring adequate documentation of sampling

methodologies and sign-offs in work papers, and considering inclusion of IIA Standards references within audit reports.

Independent External Assessment

In consultation with the Finance and Audit Committee of the Board of Visitors and the President, the Director of Internal Audit initiated discussions with the university's Procurement Department to develop a request for proposal (RFP) for an external consultant to coordinate and lead a team of peer chief audit executives (CAEs) in the completion of a full assessment. The RFP was developed and released during the fall 2015.

In early 2016, consulting firm Baker Tilly was awarded the project. Additionally, three peer CAEs were engaged to serve on the review team. These individuals include:

- Richard N. Cordova, Executive Director of Internal Audits, University of Washington
- Pamela A. Doran, Executive Director of Audit and Advisory Services, University of South Carolina System
- Michael L. Somich, Executive Director of Audit, Risk, and Compliance, Duke University

In preparation for the review, an extensive request for information and documentation was received. University Internal Audit leadership worked to respond and provide that information. The review team visited campus in early May to interview more than 20 senior leaders and key audit contacts as well as the audit staff. All members of the Finance and Audit Committee provided feedback to the team in advance of the onsite visit. In addition to the individual interviews, over 90 key constituents and recent audit clients had the opportunity to provide feedback via survey as to governance, personnel, management, and process components of the internal audit function. The university provided full support to the review team during the course of the assessment.

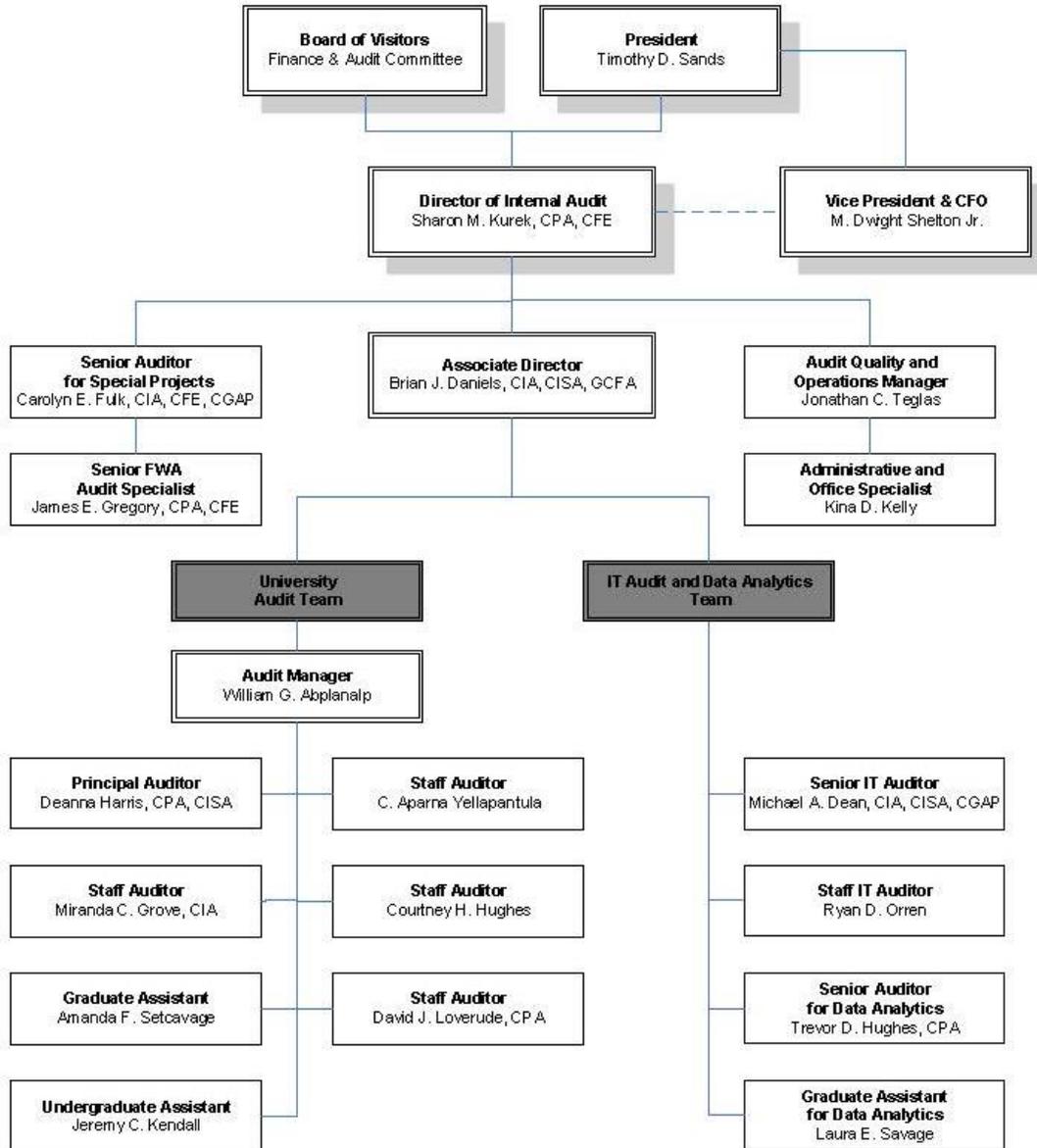
The preliminary results shared at the conclusion of the onsite visit indicated that the internal audit function "generally conforms" with the Standards, which is the highest rating. Further, the review team shared that University Internal Audit has established a strong foundation of alignment to the Standards and has a history of solid work performed. The review team will offer recommendations for institution-wide opportunities as well as several items for the internal audit function to encourage continued growth and evolution.

The final report of the review team's results will be presented at the August 2016 meeting of the Finance and Audit Committee. The next independent external assessment will be due in 2021.

Staffing / Resources

Exhibit 9 below shows University Internal Audit's organizational chart as of August 2016.

Exhibit 9 University Internal Audit Organizational Chart



Certification Legend:
 CPA – Certified Public Accountant
 CIA – Certified Internal Auditor
 CISA – Certified Information Systems Auditor
 CFE – Certified Fraud Examiner
 GCFA – GIAC Forensic Analyst
 CGAP – Certified Government Auditing Professional

Organizational Structure
UNIVERSITY INTERNAL AUDIT
 Virginia Tech

August 2016

University Internal Audit experienced turnover in several positions due to recruitment of staff to other areas within the university, as well as filling vacancies of new positions that had been granted to the office to meet the increased demand for data audit services and specialized knowledge.

Leadership oversaw the development and implementation of a career path progression plan for university and IT audit staff members to support professional growth and enrichment, including a salary benchmarking study to ensure competitive alignment with peers. Human Resources provided feedback and final approval of the developed career path progression plan during the fall of 2015. Implementation was formalized through inclusion within the departmental procedures manual, a presentation to staff members in November 2015, and inclusion of the document within the onboarding process for new employees. The progression expanded the position hierarchy of university auditors from two (staff and senior) to four levels (staff I, staff II, senior, and principal). It also reclassified IT auditor positions (both staff and senior) to administrative and professional faculty due to their specialized knowledge.

University Internal Audit staff has more than 195 years of combined professional experience in accounting, auditing, and IT and over 50 years of service to Virginia Tech. The staff offers an extensive background with expertise in such functional areas as IT; fraud and forensics; environmental, health, and safety; NCAA bylaws; financial aid; research regulations; and general financial, compliance, and operational auditing. Exhibit 10 shows the certifications and advanced degrees held by University Internal Audit staff at yearend.

Exhibit 10
Certification and Advanced Degrees held by University Internal Audit

Certification and Advanced Degrees
Professional Certifications
3 Certified Public Accountants (CPA)
3 Certified Fraud Examiners (CFE)
2 Certified Information Systems Auditor (CISA)
4 Certified Internal Auditor (CIA)
2 Certified Government Auditing Professional (CGAP)
1 Certified Forensics Analyst (GCFA)
1 Project Management Professional (PMP)
Advanced Degrees
3 Master of Business Administration (MBA)
1 Master of Education (MEd)
1 Master of Public Affairs (MPA)
1 Master of Science, Journalism

The following employees achieved new professional certifications recognizing expertise and knowledge of our profession:

- Brian J. Daniels, Associate Director Certified Internal Auditor (CIA)
- Miranda C. Grove, Staff Auditor Certified Internal Auditor (CIA)

University Internal Audit personnel continued to actively participate in a variety of roles with professional organizations to advocate and assist with improvements to the internal auditing profession as detailed below.

Sharon M. Kurek, Director

- ACUA Board Member-at-Large
- ACUA Faculty Program

Brian J. Daniels, Associate Director

- ACUA Membership Committee

Carolyn E. Fulk, Senior Auditor for Special Projects

- IIA Volunteer Instructor with Distinguished Faculty Designation

C. Aparna Yellapantula, Staff Auditor

- ACUA Annual Conference Track Coordinator

Jon Clark Teglas, Operations Manager

- ACUA Best Practices Committee

Additionally, University Internal Audit Leadership participated with Commonwealth of Virginia organizations, including the College and University Auditors of Virginia (CUAV) and the Virginia Alliance for Secure Computing and Networking (VASCAN) group aimed at improving higher education.

Inclusion and diversity within the workplace continues to be stressed. Leadership developed department-level inclusion and diversity goals and is also working to meet the established goals set by the Office of the Vice President for Finance. These include ensuring employee participation in an inclusion and diversity training activity. As of yearend, all employees had either attended or committed to attending a diversity-related training session. A staff member was appointed as our diversity leader to raise awareness and stay abreast of diversity issues and happenings. This person is our department representative at campus-wide diversity meetings and training sessions, and reports periodically at staff meetings.

To further develop the audit staff's professional skills, Exhibit 11 illustrates the types of continuing professional education (CPEs) that staff participated in during fiscal year 2015-16. University Internal Audit ensures each staff member annually receives 40 hours of CPEs to meet professional certification requirements. On average this fiscal year, staff members completed 69 hours of CPEs. To enhance employee capabilities in the identification of significant risks and causes of issues within audit engagements, the department provided a two-day on-campus training seminar to all staff. As part of the audit process, root cause analysis is an essential element of communicating findings and determining corrective actions.

Exhibit 11
FY 2015-16 Professional Development

Type of Training	Number of CPEs
Audit	248
Critical Thinking	155
Specialized Knowledge and Applications	153
Fraud	97
Data Analytics	86
Communication	64
Ethics	29
IT Security	25
Accounting	20
Business Management and Organization	8
Personal Development	7
Administrative Practices	4

Exhibit 12 compares University Internal Audit’s expenditures from fiscal year 2014-15 with expenditures for fiscal year 2015-16. The expenditures for salaries and benefits increased mostly due to the addition of a full time position, consistent staffing levels throughout the fiscal year (including a new restricted position filled at the end of fiscal year 2014-15), and the university’s merit pay increase in August 2015.

Costs associated with the external quality assessment were realized this fiscal year; however, central funding was provided to cover these expenses. Operating expenses increased due in large part to off-site administrative travel including the August 2015 Board of Visitors meeting, held in Arlington.

The department remains committed to providing functional, quality, continued professional education as well as training opportunities for newly hired employees, as summarized above. Personnel expenses were attributable to recruitment and relocation costs of departmental staff members.

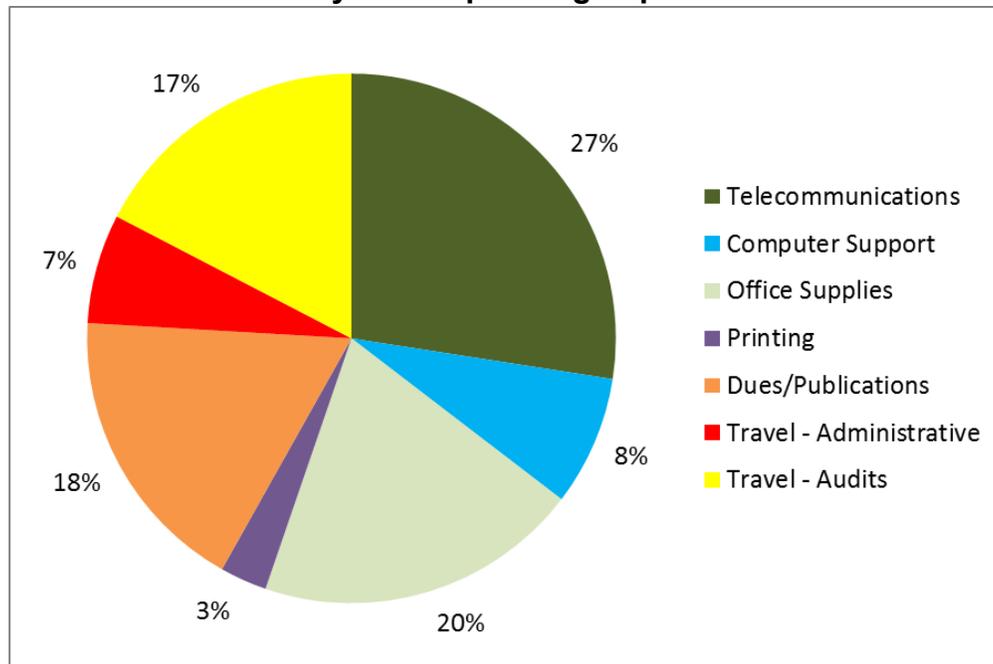
Audit software expenses in fiscal year 2015-16 rose in line with the strategic commitment to the addition of several computer-assisted audit tools and techniques, coupled with the increase in existing software license fees. Equipment costs increased as mobile and tablet computer devices were replaced and new devices were necessitated by staff growth.

**Exhibit 12
Analysis of Expenditures**

	FY2015	FY2016
Salaries and Benefits	\$ 1,118,062	\$ 1,248,350
External Quality Assessment	\$ -	\$ 39,739
Operating Expenses	\$ 33,063	\$ 35,572
Training	\$ 45,463	\$ 33,663
Personnel Expenses	\$ 1,110	\$ 18,435
Audit Software	\$ 12,346	\$ 17,410
Equipment	\$ 8,836	\$ 12,574
Total	\$1,218,880	\$1,405,743

Exhibit 13 shows an analysis of operating expenses. Approximately 60 percent of operating expenses resulted from basic costs to support the department including telecommunications, computer support, office supplies, and printing. Travel expenses for off-site audits will remain an ongoing cost as audit effort will continue to be dedicated to activity outside of Blacksburg. Similarly, membership dues and publication expenses will remain an ongoing cost as leadership encourages and sponsors professional certification and organizational participation.

**Exhibit 13
Analysis of Operating Expenses**





University Internal Audit

Annual Update

August 29, 2016



Mission Statement

- Provide independent, objective assurance and advisory services designed to add value and improve the university's operations
- Help university departments accomplish their objectives by bringing a systematic, disciplined approach to identify opportunities for improvement



State of Control Environment

- Internal Audit Program
 - Significant element of the university's overall control structure
 - Positive influence on the control environment
 - Assist management and the BOV in the discharge of their fiduciary responsibilities



State of Control Environment

- No material control weaknesses were identified; however, a number of areas requiring improvement were noted
- Work was not limited by management
- Independence/objectivity was not impaired



State of Control Environment

- Management accepts their responsibility for internal control and is supportive of audit efforts
- Management generally accepts audit findings and responds by developing action plans to address concerns

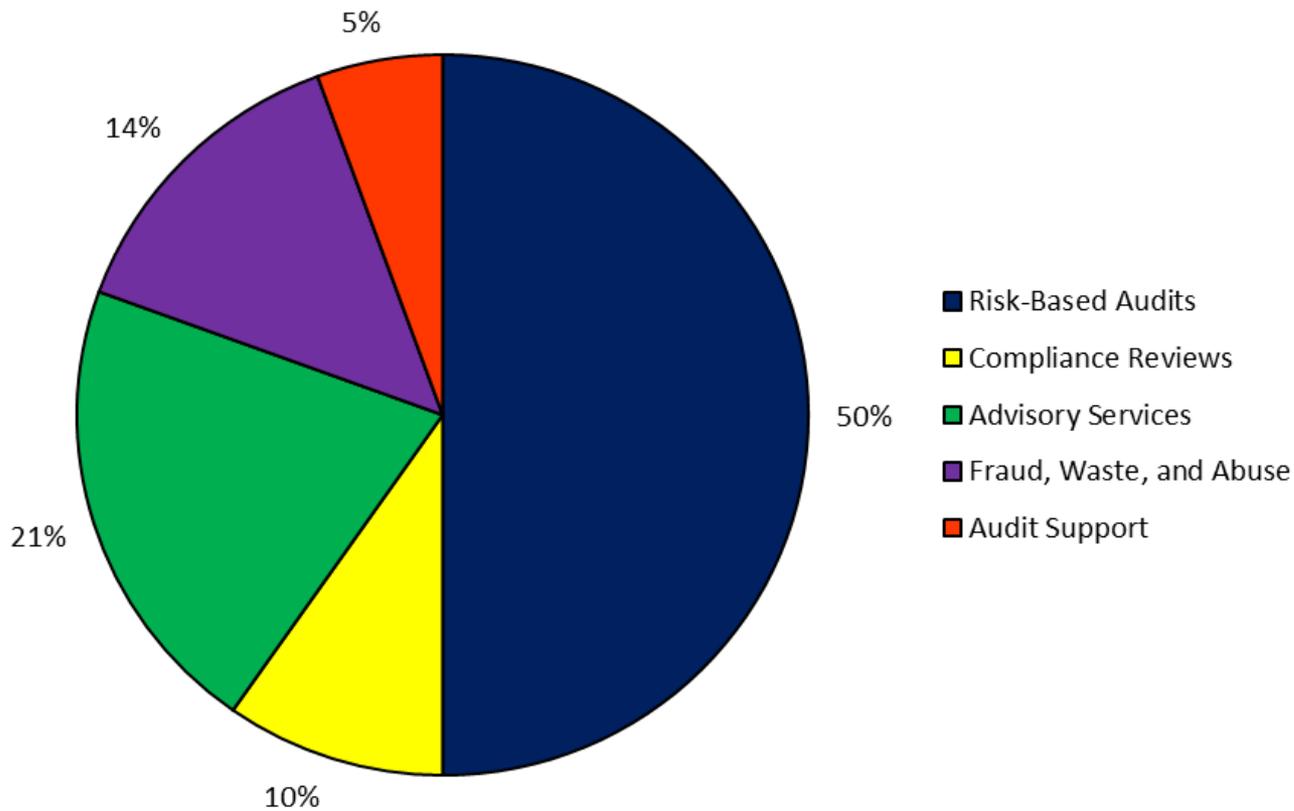
Exh. 1: FY 2015-16 Completion of Audit Plan

Audits	
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Audits - Percentage Complete	91%
<i>Note: Includes Compliance and Advisory Reviews</i>	



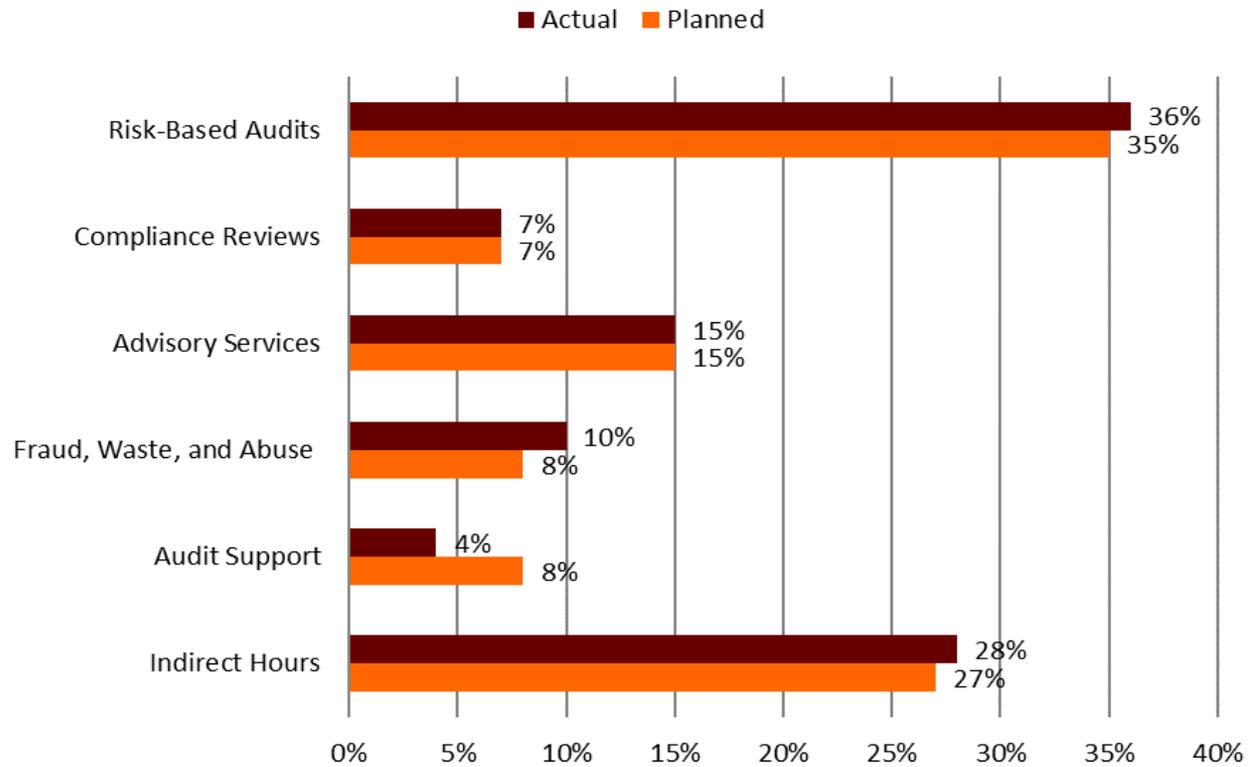
Exh. 2: Distribution of Direct Audit Hours

(Excludes Indirect Hours for Administration, Training, Leave, and Computer Support)





Exh. 3: FY 2016 Actual vs. Planned Hours





Management Corrective Actions (MCAs)

- Each audit recommendation and its associated MCA is rated high, medium, or low priority
- A primary objective of this classification is to drive a greater sense of urgency in completing the corrective action and completion of audit follow-up
- The Finance and Audit Committee receives the higher priority recommendations and associated MCAs



Exh. 5: Inventory of MCAs

Beginning # of MCAs	39
MCAs added	91
MCAs closed	<u>84</u>
Current open inventory of MCAs	46



Recommendations for Cost Containment & Revenue Enhancement

- Advance Payments
- Inventory Processes (2)
- Event Charges
- Contract Pricing
- Program Charges

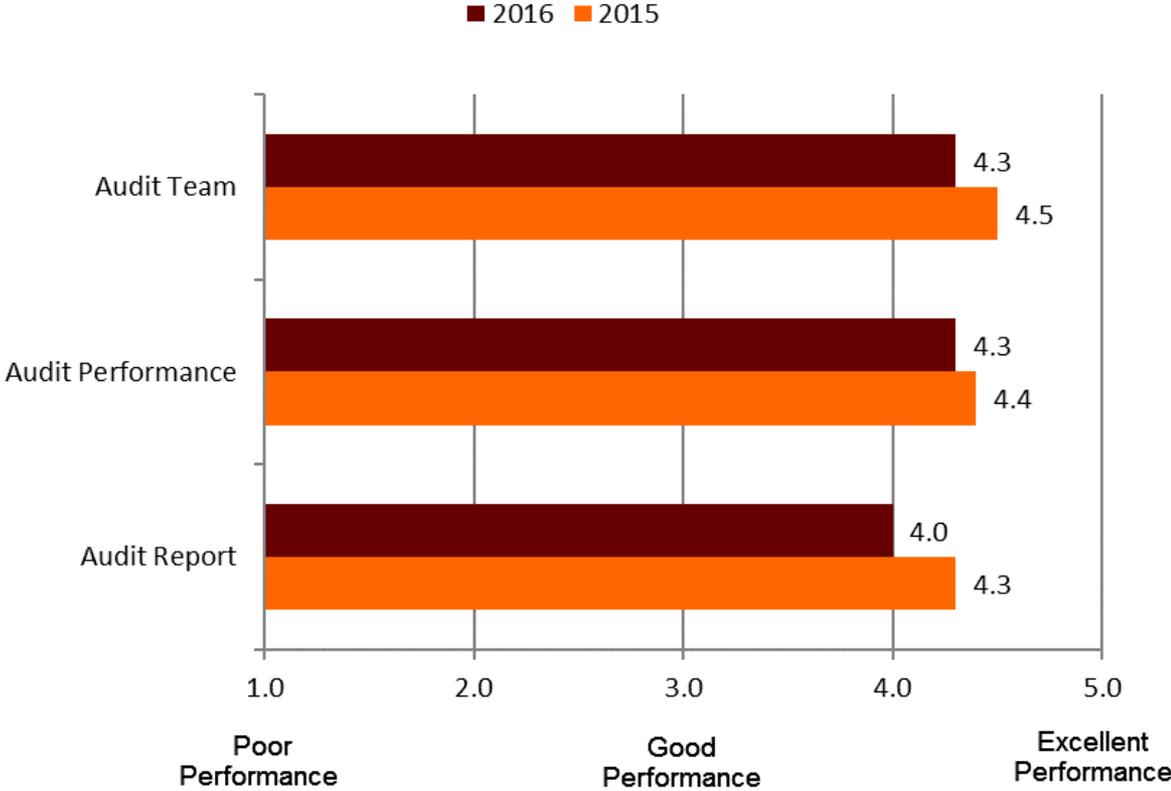


Exh. 6: Recurring Audit Issues

Recommendation	Occurrences
IT: Security	22
Documentation and Communication of Policies and Procedures	8
Process Improvements	5
Fiscal Responsibility	4
Health and Safety Training	4
Conflicts of Interest and Commitment	3
Inventory Management	3
Billing and Accounts Receivable	3



Exh. 7: Survey Results





Survey Comments

- 31 comments from respondents
 - Overall – Appreciated the audit process, the communication during the audit, and/or the courtesy, professionalism, and thoroughness demonstrated by the audit team
 - 2 Recommended Improvements
 - More detailed information to highlight positive aspects
 - Strategic alignment of engagements to improve efficiency

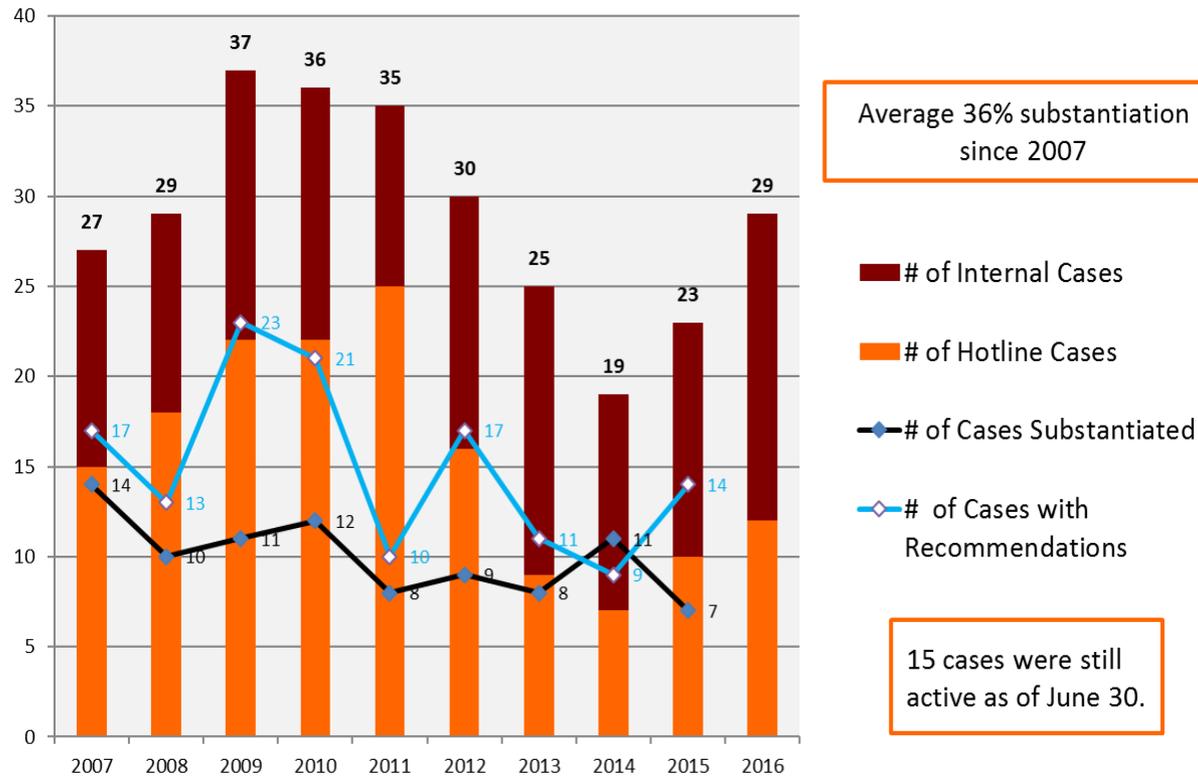


Fraud, Waste, and Abuse (FWA)

- Received 29 cases in FY 2015-16
- Closed 14 from FY 2015-16
- Closed 10 from prior years
- For the 24 completed:
 - 2 of 12 (17%) hotline cases were substantiated
 - 7 of 12 (58%) internally reported cases were substantiated



Exh. 8: FWA Case Volume Summary

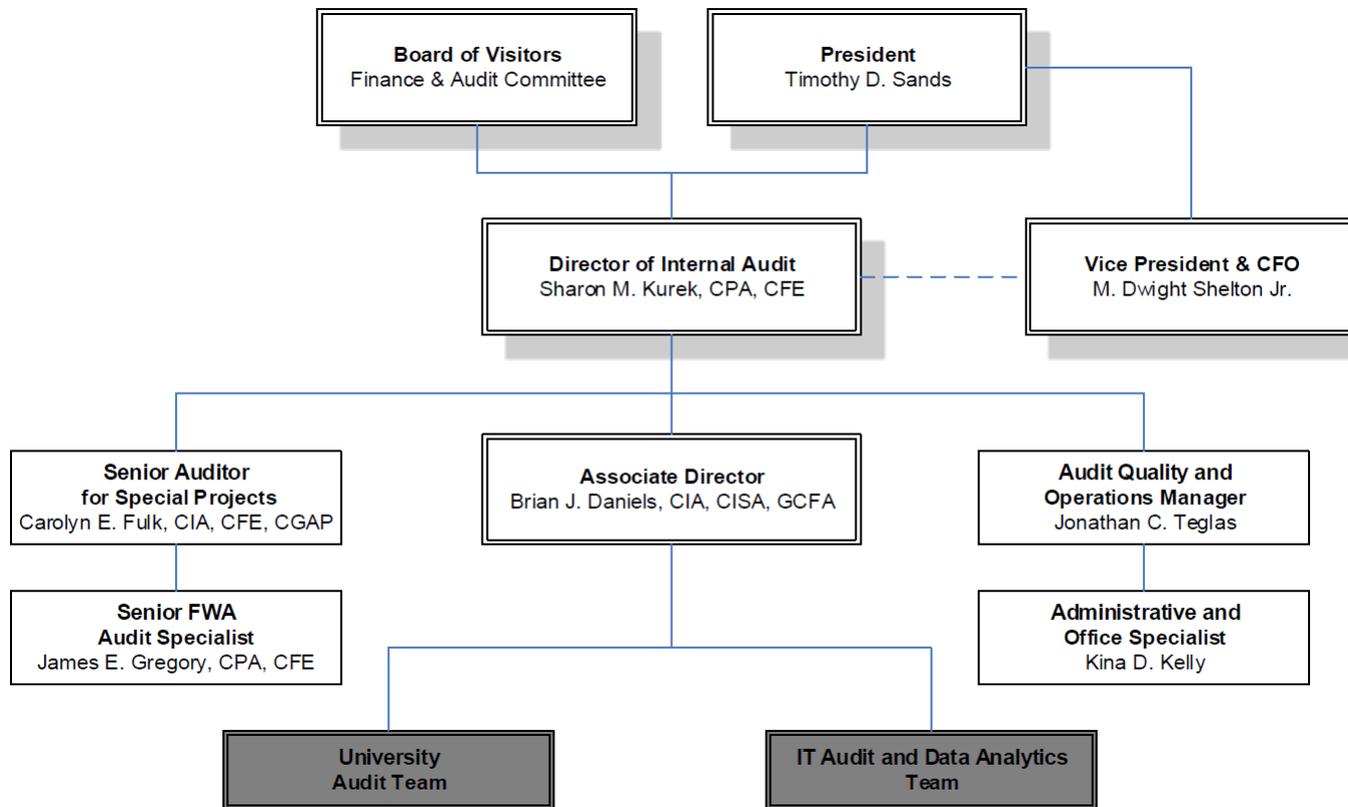




Fraud, Waste, and Abuse (FWA)

- 70% of allegations fall within five general categories:
 - Leave or time abuse
 - Improper use of university resources
 - Abuse of authority
 - Misfeasance and waste
 - Theft or embezzlement

Exh. 9: Organizational Chart





Internal Audit Staff Experience

- Combined 195 years of professional experience in accounting, auditing, and information technology
- Combined 50 years of service to Virginia Tech



Staff Achievements

- **Brian J. Daniels**, Associate Director, earned the Certified Internal Auditor (CIA) designation
- **Miranda C. Grove**, Staff Auditor, earned the Certified Internal Auditor (CIA) designation



Exh. 10: Staff Education

Certification and Advanced Degrees	
Professional Certifications	
3	Certified Public Accountants (CPA)
3	Certified Fraud Examiners (CFE)
2	Certified Information Systems Auditor (CISA)
4	Certified Internal Auditor (CIA)
2	Certified Government Auditing Professional (CGAP)
1	Certified Forensics Analyst (GCFA)
1	Project Management Professional (PMP)
Advanced Degrees	
3	Master of Business Administration (MBA)
1	Master of Education (MEd)
1	Master of Public Affairs (MPA)
1	Master of Science, Journalism

Exh. 11: Staff Professional Development

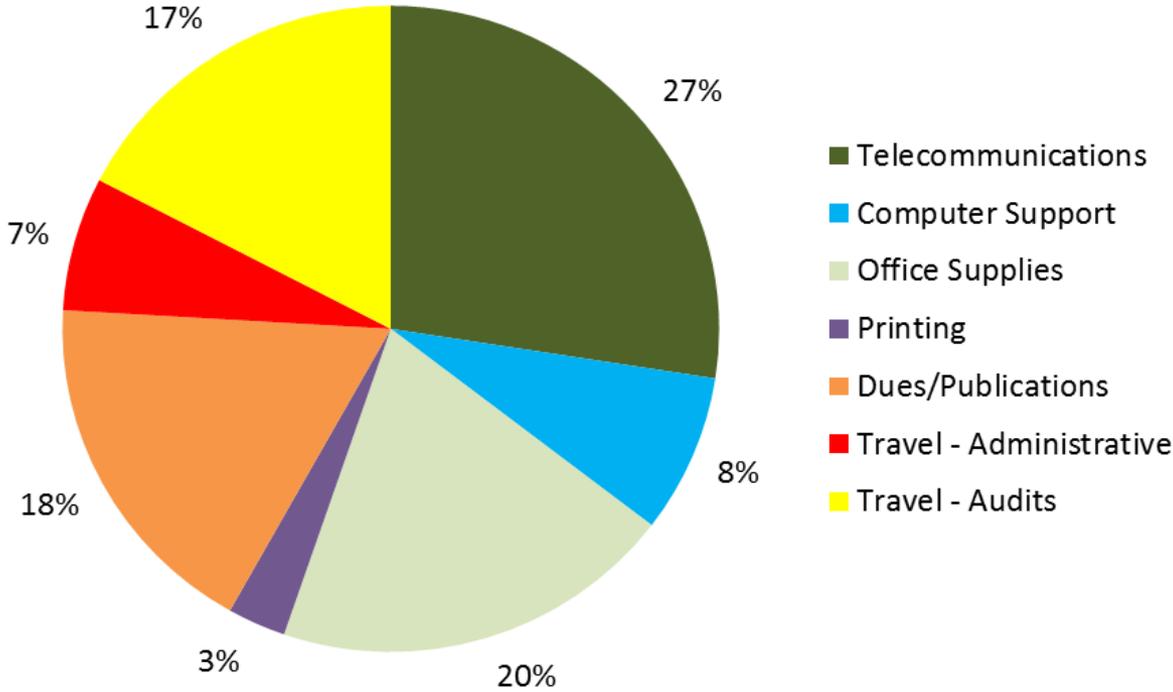
Types of Training	Number of CPEs
Auditing	248
Critical Thinking	155
Specialized Knowledge and Applications	153
Fraud	97
Data Analytics	86
Communication	64
Ethics	29
IT Security	25
Accounting	20
Business Management and Organization	8
Personal Development	7
Administrative Practices	4

Exh. 12: Analysis of Expenditures

	FY2014-15	FY2015-16
Salaries and Benefits	\$ 1,118,062	\$ 1,248,350
External Quality Assessment	-	39,739
Operating Expenses	33,063	35,572
Training	45,463	33,663
Personnel Expenses	1,110	18,435
Audit Software	12,346	17,410
Equipment	8,836	12,574
Total	\$ 1,218,880	\$ 1,405,743



Exh. 13: Operating Expenses



Review and Approval of the Fiscal Year 2016-17 Internal Audit Plan

FINANCE AND AUDIT COMMITTEE

August 29, 2016

University Internal Audit presents the Fiscal Year 2016-17 Internal Audit Plan to the Finance and Audit Committee for final review and approval. An annual risk assessment was conducted to identify the entities that should receive audit attention in fiscal year 2016-17 and a core audit plan was developed.

For fiscal year 2016-17, approximately 30 audit projects are proposed, with 74 percent of University Internal Audit's available resources committed to the completion of planned projects. A description of each project is provided within the audit plan. University Internal Audit's goal will be to complete 85 percent of the audit plan. The internal audit plan may be modified based on the external audit environment or changes in regulations, management, or resources.

RECOMMENDATION:

That the Fiscal Year 2016-17 Internal Audit Plan be approved by the Finance and Audit Committee.

August 29, 2016

Virginia Tech

University Internal Audit

Fiscal Year 2016-17 Internal Audit Plan

August 29, 2016

OVERVIEW

University Internal Audit conducts risk-based assurance engagements, compliance reviews, management advisory services, and investigations. The risk-based assurance engagement is an objective examination of evidence to provide an independent assessment of governance, risk management, and the control systems within the university. The objective of the compliance review is to ensure all senior management areas (even low risk) receive periodic reviews from University Internal Audit every five years to perform tests of compliance with major university business policies at a minimum. The nature and scope of management advisory service activities, developed through agreement with the client, add value and improve the university's governance, risk management, and control processes without the internal auditor assuming management responsibility.

RISK ASSESSMENT PROCESS

University Internal Audit leadership conducted an annual risk assessment to identify the entities that should receive audit attention in fiscal year 2016-17. University departments and administrative operations were grouped into approximately 175 auditable entities or responsibility centers based on common missions and the existing organizational structure.

For each auditable entity, University Internal Audit reviewed financial data, including expenditures, revenues, cash receipts, federal contracts and grants, and the total number of employees. The relative business risk was assessed on a judgmental basis for the following qualitative and quantitative factors.

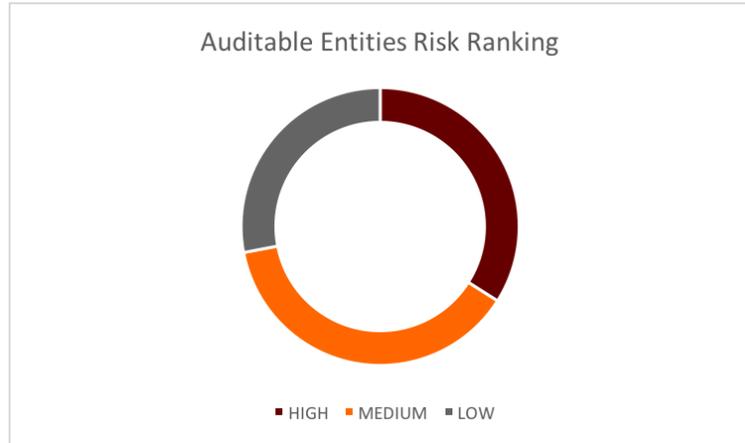
Factors
Quality and Stability of Control Environment
Business Exposure (Materiality and Liquidity of Operational Resources)
Public and Political Sensitivity
Compliance Requirements
Information Technology and Management Reporting

Elements considered within these factors included:

- Management's awareness of internal controls;
- Stability and expertise of management;
- Interval since the last audit review;
- Complexity of operations and technology applications;
- Materiality or financial impact to the university;
- Potential impact to reputation;
- Impact of noncompliance with internal and external policy, procedure, regulatory, and statutory requirements; and

- Reliance on information and management reporting for operating decisions, monitoring performance, providing services, and allocating resources.

The chart depicts the results of the risk assessment classifications. The risk assessment results were consistent with previous risk assessments conducted by University Internal Audit.



INFORMATION TECHNOLOGY RISK ASSESSMENT

University Internal Audit has also created a university-wide information technology (IT) risk-based audit plan mapped to the ISO 27002 standard, a best practice for developing and maintaining enterprise-wide IT security also references by university policies. University Internal Audit consulted with key IT personnel to ensure that audit coverage is maximized and properly targeted. The assessment of IT and business operations at the university identified four high-level risk domains intended to encapsulate the vast majority of the systems and computing environments within the university as follows:

- Student Systems;
- Finance and Administrative Systems;
- Human Resources Systems; and
- Research Systems.

The IT audit approach includes a variety of topical audits to gain a better understanding of the university-wide environment instead of narrowly focusing on the performance of individual departments. This approach also allows University Internal Audit to maintain current knowledge of the IT security and operating conditions in a dynamic industry through the constant evaluation and reassessment of planned audit engagements.

CORE AUDIT PLAN

University Internal Audit has identified certain critical areas for inclusion in the core audit plan to ensure that adequate coverage is provided over a reasonable time. To obtain additional insight and validate the plan, one-on-one discussions were conducted with senior leadership to identify reputation factors, regulatory changes, organization shifts, new initiatives, and deployment of new systems or technology tools.

The critical areas for core audit plan inclusion are:

- Academic Units
- Auxiliary Enterprises and Athletics
- Campus Safety and Security
- Enrollment Services
- Facilities and Operations
- Financial Management
- Human Resources
- Information Technology
- Off-Campus Locations
- Research
- Student Services

The core audit plan includes several multi-year audits that will allow for annual reviews of selected components of the entities with high external compliance risk and complex operations. These entities are University Scholarships and Financial Aid, Research, Human Resources, and Intercollegiate Athletics.

FISCAL YEAR 2016-17 AUDIT PLAN

The audit plan focuses on delivering value to Virginia Tech with an emphasis on the follow risk areas: strategic, operational, financial, compliance, and IT. If new topics emerge during the audit plan period that require more immediate attention, reconfiguration of the plan can be undertaken to accommodate these changes. University Internal Audit's goal is to complete 85 percent of the audit plan. As each audit is undertaken, risks will be re-evaluated to ensure proper audit coverage with consideration of confidentiality, integrity, and availability. Annual expenditures and revenues referenced below reflect fiscal year 2014-15 data unless otherwise noted.

Risk-Based Assurance

Planned Engagement	Overview	Risk Area
Athletics NCAA – Recruiting *	The Department of Athletics (Athletics), with 22 varsity sports at the NCAA Division I level, monitors more than 550 student-athletes each academic year. Athletics had operating revenues of approximately \$78 million and total operating expenses of approximately \$77 million. University Internal Audit conducts a complete audit of Athletics over a five-year period. This audit will include reviews of recruiting; institutional control; and awards, benefits, and expenses.	Compliance
Biochemistry	Biochemistry is the branch of the life sciences devoted to the identification and analysis of the structure, function, and mechanisms of action of the molecules of life. With more than 600 undergraduate Biochemistry majors, this program is one of the largest B.S. granting programs in the nation. Total expenditures for the department were \$8.4 million, with sponsored research totaling nearly \$4 million, a figure that represents 14% growth since 2010.	Operational – Academic
Compliance Program Assessment	The university, with its significant footprint in terms of the breadth of operations, research, and human resources, is subject to dynamic and expansive compliance requirements. Various compliance functions operate in a distributed manner with various entities responsible for topical compliance, including NCAA, Title IX, export control, human and animal	Compliance

Planned Engagement	Overview	Risk Area
	subjects, and safety and security, among many other topics. An effective compliance program ensures that the requirements of Federal Sentencing Guidelines are met, including periodically performing risk assessments and taking appropriate steps to reduce the risk identified through this process.	
Controller's Office – Fixed Assets	The Fixed Assets and Equipment Inventory Services (FAEIS) section of the Controller's Office is responsible for maintaining and managing the university's official fixed assets system that includes land, buildings, improvements, and both fixed and moveable equipment. Ongoing moveable equipment inventories are conducted to meet state and federal regulations. In addition, FAEIS provides institutional reporting services to the university, the Commonwealth, and other regional and national agencies, including federal sponsors.	Financial
Dining Services	Dining Services manages nine dining centers and is the largest single department on campus with over 2,300 employees in 2015. The award winning and nationally recognized unit serves approximately 7.1 million meals per year and manages approximately 19,000 dining plan holders with debit-style plans that can be used in any of the dining centers. Dining Services expenditures equaled almost \$52 million and total revenue equaled \$58.6 million, comprised of \$6.3 million in cash receipts.	Operational – Student
Emergency Preparedness	The Office of Emergency Management, within the Division of Administrative Services, coordinates planning, training, response, and recovery efforts to ensure the emergency readiness of the Virginia Tech community. The office oversees more than 220 departmental continuity of operations plans, public information and communication capabilities, regular drills and exercises, resource management, hazard mitigation, and coordination of internal and external stakeholders. The office's efforts led to Virginia Tech's recognition in 2014 as the first college or university accredited by the Emergency Management Accreditation Program.	Operational – Safety
Geosciences	The Department of Geosciences, awarding degrees at the university since 1907, focuses on research, education, and outreach dealing with the nature of the earth. Students and faculty investigate earth processes at scales ranging from atomic to planetary. Expenditures for the department totaled \$8.8 million, with sponsored research totaling just over \$2.7 million.	Operational – Academic
Global Activities	The university's emphasis on efforts to further develop its global presence presents distinct opportunities and challenges. Global operations can pose significant risks related to immigration compliance, economic and tax implications, fraud and loss of funds, life safety, transportation and evacuation, and reputational concerns, among others. Previously issued presidential memoranda and university policies require completion of requisite forms and reports as well as notification of the appropriate offices in advance of global activities, particularly when students are involved.	Strategic
Human Resources: Benefits *	Human Resources administers the Commonwealth benefits program and provides benefit management and guidance for approximately 7,500 faculty and staff. The benefits program is an integral part of the university's employee compensation	Financial

Planned Engagement	Overview	Risk Area
	package and includes health insurance, leave, legal resources, retirement plans, tuition assistance, and workers' compensation.	
Investments and Debt Management	The Office of Investments and Debt Management oversees the financial assets of the university and the related Virginia Tech Foundation Inc. (VTF). Responsibilities include the investment oversight of the VTF endowment and life income programs along with the management, accounting, and reporting of various operating and short-term investment funds. The office also manages the comprehensive debt program for the university and other university-related corporations. The program includes securing debt financing for many of the capital projects located on campus and at the adjacent Corporate Research Center as well as maintaining compliance of all bond covenants.	Financial
Mining and Minerals Engineering	With the first engineering degree offered at the university to a "mining engineer" in 1885, the Department of Mining and Minerals Engineering has developed into a leading mining and minerals engineering program. In recent years, enrollment in both undergraduate and graduate programs has grown significantly. The department is home to two internationally recognized research centers: the Virginia Center for Coal and Energy Research and the Center for Advanced Separation Technologies. Department expenditures totaled nearly \$8.7 million, with sponsored research totaling approximately \$6.1 million, a figure that represents significant growth since 2010 when this figure was under \$400,000.	Operational – Academic
Physics	The Department of Physics offers degrees in physics, applied physics, industrial physics, and nuclear science and engineering, among others. Faculty members within the department have been recognized nationally and internationally for research in areas of particle and nuclear physics, condensed matter physics, biophysics, and astrophysics. Expenditures for the department exceeded \$11.2 million, with sponsored research nearing \$3.1 million. While the sponsored research portfolio has been stable since 2010, overall departmental expenditures have grown by 21% over that same period.	Operational – Academic
Research: High Performance Computing	Virginia Tech is continually advancing its portfolio of high-performance computing (HPC) services and strengthening its commitment to bring the advantages of high-performance computing and visualization to more fields of academic endeavor. Advanced Research Computing (ARC), a unit within the division of IT, provides centralized support for research computing by building, operating, and promoting the use of advanced cyberinfrastructure at Virginia Tech. ARC recently unveiled its newest HPC system, named NewRiver. This and other supercomputing resources are available to individuals and departments throughout the university.	Information Technology – Research
Research: Lab Safety *	Lab Safety requires the cultural commitment of faculty, staff, and students to proper procedures, training, and behavior. This is especially important at Virginia Tech where numerous teaching and research labs operate within the extensive overall research portfolio, where the university ranked 39 th in the most recent National Science Foundation (NSF) rankings with more than \$513 million in total research spending. Among its	Compliance – Safety

Planned Engagement	Overview	Risk Area
	Commonwealth peers, Virginia Tech maintains the largest research portfolio and is the only university ranking in the NSF top 50. Environmental Health and Safety works to create a safe work environment through the promotion of lab safety.	
Student Engagement and Campus Life	Student Engagement and Campus Life, a unit within the Division of Student Affairs, complements the academic program by providing a variety of activities, educational opportunities, programs, facilities, and services that enhance student development and enrich the quality of campus life. The university has three student centers: Squires Student Center, the Graduate Life Center at Donaldson Brown, and Johnston Student Center. Previously known as Student Centers and Activities, the unit had operating revenues of approximately \$13.8 million and total operating expenses of \$12.9 million.	Operational – Student
Travel and Employee Reimbursements	Travel, meal, and other employee reimbursement documents flow from university departments to the Controller's Office. While the Controller's Office reviews the requests and processes them for payment in accordance with federal, state, and university policy and procedures, significant responsibility still lies with the employee's department and supervisory structure to ensure good stewardship of public and other university funds. All reimbursements must be in accordance with the plan approved by the Internal Revenue Service to help ensure effective reimbursement without significant taxable income implications.	Financial
Undergraduate Admissions	The Office of Undergraduate Admissions strives to attract, recruit, and enroll a highly qualified, talented, and diverse student body in a manner that supports the university's well-being. The class of 2019 required processing of approximately 22,500 applicants, of which approximately 16,400 were offered admission and 6,500 ultimately accepted admission. These results reflect the increasingly positive university reputation and strategic initiatives related to enrollment growth.	Operational – Student
University Policies Review	The university maintains approximately 180 policies governing the various aspects of university operations including teaching and learning, research, administration, and outreach. These policies function as a key element in the university governance structure. Specific policy groups include Finance and Business, Human Resources, Facilities, Academics, Student Affairs, Development and University Relations, and Research. University-level policies require approval through a governance process intended to assure appropriate perspective and forethought on developing matters or as conditions change requiring policy revision.	Strategic
University Scholarships and Financial Aid *	The Office of University Scholarships and Financial Aid (USFA) is part of the Enrollment and Degree Management area. USFA supports the university's student access, enrollment, and retention goals by providing the financial means to encourage economic, social, cultural, and academic diversity in the student body. USFA provided or monitored approximately \$425 million in student financial assistance. A complete audit of USFA is performed over a four-year period. This review will include state and institutional programs and over-awards.	Compliance and Financial

Planned Engagement	Overview	Risk Area
Virginia Tech Carilion Research Institute	Located in Roanoke, the Virginia Tech Carilion Research Institute (VTCRI) combined with the Virginia Tech Carilion School of Medicine comprise the entity known as Virginia Tech Carilion (VTC). VTCRI leverages the university's world-class strength in basic sciences, bioinformatics, and engineering along with Carilion Clinic's highly experienced medical staff and rich history in medical education. VTC strives to improve human health and quality of life by providing leadership in medical education and biomedical and clinical research. Reporting to the Vice President for Health Sciences and Technology, VTCRI had expenditures of more than \$22 million, including more than \$9 million in sponsored research, representing growth of 35% and 59% respectively since 2012.	Operational – Research
Virginia Tech Police Department	The Virginia Tech Police Department is a full-service, nationally accredited police agency responsible for the well-being of more than 50,000 students, employees, and visitors at Virginia Tech, 24 hours a day. The department works closely with administrators, students, and employees to create and maintain a secure atmosphere, chairing the Threat Assessment team, leading the university's Clery Act compliance, and overseeing the Virginia Tech Rescue Squad. The department employs 50 full-time sworn police officers as well as more than a dozen security guards and Safe Ride officers.	Operational – Safety

* Entity receives an annual audit on different components of their operation.

Information Technology Assurance

Planned Engagement	Overview	Risk Area
IT: Governance and General Controls Review	Information Technology General Controls (ITGCs) apply to system components, processes, and data for the university. The objectives of ITGCs are to ensure the proper development and implementation of applications, as well as the integrity of programs, data files, and computer operations. Common ITGCs include logical access controls over infrastructure, applications, and data; computer operation controls; data center physical security controls; and IT governance.	Information Technology
IT: Network Security	Virginia Tech provides an extensive telecommunications and data network that accommodates tens of thousands of registered users connecting work and personal devices through wired, Wi-Fi, and virtual private network connections. Additionally, the university operates a Restricted/Limited Access Network (RLAN), which provides more security for sensitive data.	Information Technology
IT: Printer and Networked Device Security	There are numerous printers and other networked devices within the university's administrative and academic units. These devices can serve critical roles in processing sensitive data or vital operations critical to continued operations and safety of students and employees. This is of particular concern in that the devices themselves continue to become more complex with their own data storage and operating systems in use, yet may not be secured with the same level of detail that servers or personal computers endure.	Information Technology

Planned Engagement	Overview	Risk Area
IT: Surplus Property	The Procurement Department is responsible for oversight of the disposal of surplus property. The surplus property activity at the university includes disposal of a wide variety of items including vehicles, kitchenware, office equipment, as well as computer and personal electronic equipment. Approximately eight public auctions are held per year at the Surplus Property Warehouse with the proceeds from auction sales returned to the university general fund. Computer and personal electronic equipment sales represent a significant portion of the approximate \$1.1 million in total annual revenue, but also increase the risk of exposure of sensitive data if appropriate data sanitization procedures are not implemented. Sanitization is a dynamic challenge as equipment and device storage methods change.	Information Technology

University Policy Compliance Reviews

University Internal Audit will continue its program of limited scope reviews of senior management areas. These surveys review major aspects of a department's administrative processes using internal control questionnaires and limited testing that provides broad audit coverage ensuring compliance with university policies on campus.

Planned Engagement	Overview	Risk Area
College of Architecture and Urban Studies	The College of Architecture and Urban Studies (CAUS) consists of four schools and a multi-college program. CAUS offers 11 undergraduate majors, 7 minors, and 13 graduate degree programs. Degree programs are based both in Blacksburg and Alexandria, Virginia, and there is an international location in Riva San Vitale, Switzerland through Virginia Tech's Steger Center for International Scholarship.	Operational – Academic
Other Executive Offices	Additional executive offices within the hierarchy of the Office of the President will receive a review. These entities include the Global Forum for Urban and Regional Resilience, the Office of the Senior Fellow for Resource Development, and University Legal Counsel.	Operational – Administrative
Vice President for Finance	The finance division provides the primary support to university leadership in identifying, obtaining, and allocating the resources needed to achieve the university's mission and the goals and objectives of the university's strategic plan. Offices include Budget and Financial Planning, Bursar, Capital Assets and Financial Management, Controller, Procurement, Risk Management, and the University Treasurer.	Operational – Administrative
Vice President for Outreach and International Affairs	The Vice President for Outreach and International Affairs (OIA) supports the university's engagement mission by creating community partnerships and economic development projects, offering professional development programs and technical assistance, and building collaborations to enrich discovery and learning within the Commonwealth and throughout the world. OIA leads Virginia Tech's presence on five continents, regional research and professional development centers across the Commonwealth, and Blacksburg-based centers.	Operational – Administrative

Management Advisory Services

Planned Engagement	Overview	Risk Area
Advancement System (Blackbaud)	In 2015, the university restructured alumni relations, development, and university relations into a more cohesive Advancement division. The Advancement division procured and began implementation of a system designed to support its operations to allow managers to control and evaluate the diverse activities critical to the university, including alumni cultivation, donor relations, prospect management, campaign solicitation, gift processing and accounting, and pledge tracking. Implementation will include conversion of content and database structure while maintaining data integrity.	Information – Technology
Club Sports	An extramural sport club is a group of students who form an organization to practice and compete in a sport. There are currently 31 sport clubs administered by the Virginia Tech Department of Recreational Sports. Each club is comprised students, who organize, fund, and promote their clubs with the ultimate goal of competing against other colleges and universities on both a regional and national level. Club Sports are legally considered to be a part of the Department of Recreational Sports.	Operational – Student
Enterprise Risk Management	Universities face an ever-changing and extensive myriad of risks related to continued success and operation. Enterprise Risk Management (ERM) is an organization-wide systematic approach to identify and tactically manage risk, focusing broadly across all risks: compliance, finance, operations, and strategic. ERM integrates risk into an institution’s strategic plans with the goal of achieving an appropriate balance of risk and return. Some of the benefits of ERM include improved communication on risk among senior leaders and Board members which leads to more informed decisions, better allocation of resources, and stronger governance practices.	Strategic
School of Medicine	The Virginia Tech Carilion School of Medicine represents a unique, public-private partnership between a top-tier research university and a major health care institution. The school, with full accreditation from the Southern Association of Colleges and Schools Commission on Colleges and the Liaison Committee on Medical Education, is slated for transition within Virginia Tech.	Operational – Academic
Title IX Program Policies and Procedures	Virginia Tech receives federal financial assistance in many forms, including research grants from federal agencies. Failing to comply with Title IX or other federal civil rights requirements can result in the termination of all or part of a university’s federal funding. Educational institutions are required to provide women and men in all disciplines comparable resources, support, and promotional opportunities. Title IX requires that males and females receive fair and equal treatment in all areas of education, including athletics. Other areas that fall within the scope of Title IX include recruitment, admissions, course offerings and access, scholarships and financial aid, sexual harassment, assault, and violence.	Compliance
Youth Protection Activities	The university is committed to the safety and welfare of its students, employees, and visitors through the establishment of practices that support a safe and secure environment in all buildings and grounds owned, controlled, or leased by Virginia Tech, including satellite locations, as well as promoting safety	Operational – Administrative

Planned Engagement	Overview	Risk Area
	through policies and programs. Administrators, employees, students, volunteers, and others working with minors (children under the age of 18) have a responsibility to promote their protection.	

Special Projects and Annual Audit Activities

Activity	Overview
Special Projects	Investigate fraud, waste, and abuse allegations.
Annual Audit Activities (Follow-up, Inventory)	Conduct follow-up audit procedures to ensure that management is implementing controls as described within their responses to audit report recommendations. Assist management with year-end inventory counts for financial statement verifications.
External Audit Coordination	Manage and serve as the liaison for all external audit services including contracted and regulatory-imposed audits.

AUDIT RESOURCES

The audit plan for fiscal year 2016-17 is based on professional staffing of 13 full-time equivalents (FTEs). Staffing will be augmented by the continuation of the student internship program in which two Virginia Tech students are employed. Approximately 74 percent of University Internal Audit's available resources are committed to the completion of planned audit projects, management advisory reviews, and investigations. The annual audit plan is designed to provide appropriate coverage utilizing a variety of audit methodologies including audits of individual units, functional and process audits, university-wide reviews, and information system projects. University Internal Audit conducts follow-up audit procedures throughout the year to ensure that management is implementing controls as described within their responses to audit report recommendations.

Audit resources are allocated as follows:

- 52% of University Internal Audit's available resources are committed to the completion of planned audit projects and follow-up audit procedures.
- 14% to accommodate requests from management and consultations with university departments.
- 8% to conduct investigations into fraud, waste, and abuse allegations.
- 13% for employee professional development, internal quality improvement projects, and other internal administrative functions.
- 13% for compensated absences such as annual, sick, and holiday leave.

Review and Acceptance of Reports Issued by University Internal Audit

FINANCE AND AUDIT COMMITTEE

August 16, 2016

Background

In concurrence with the Fiscal Year 2015-16 Internal Audit Plan approved by the Finance and Audit Committee at the August 31, 2015 Board of Visitors meeting, University Internal Audit has completed four risk-based audits and one compliance review during this reporting period. Note that while the Institute for Society, Culture, and Environment and the Interdisciplinary Center for Applied Mathematics are reported separately below, the audits were conducted as one audit project. This report provides a summary of the ratings issued during the period and the rating system definitions. With the submission of these reports, University Internal Audit has completed 91 percent of the Fiscal Year 2015-16 Internal Audit Plan. The remaining three projects are underway and will be presented at the November Board of Visitors meeting.

Ratings Issued This Period

Athletics NCAA Compliance	Improvements are Recommended
Human Resources: Leave Accounting	Improvements are Recommended
Graduate Admissions Application System	Significant Improvements are Needed
Institute for Society, Culture, and Environment	Effective
Interdisciplinary Center for Applied Mathematics	Effective
Office of the Executive Vice President and Provost	Effective

Summary of Audit Ratings

University Internal Audit'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 reviewed above be accepted by the Finance and Audit Committee.

August 29, 2016

Update on the Department of Education Onsite Student Financial Aid Review

FINANCE AND AUDIT COMMITTEE

July 13, 2016

The U.S. Department of Education (DOE) conducted an onsite program review of the university's Student Financial Aid programs. The focus of the review was to determine Virginia Tech's compliance with the statutes and federal regulations as they pertain to the institution's administration of Title IV programs. Title IV programs are federal student aid programs authorized under Title IV of the Higher Education Act (HEA) and include federal grants, loans and work-study programs. The review consisted of, but was not limited to, an examination of Virginia Tech's policies and procedures regarding institutional and student eligibility, individual student financial aid and academic files, attendance records, student account ledgers, and consumer information requirements. The audit team was on campus from March 15 - March 17, 2016.

DOE reviewed a sample of 20 files from the 2015-2016 (year to date) award year. The student files were selected randomly from the list of students who: 1) withdrew or ceased attendance for any reason other than graduation; 2) were selected for verification; and 3) received all non-passing grades ("0" GPA) for any term within the award year.

DOE issued a preliminary program review report listing initial findings of the review on June 28, 2016. The university is actively reviewing and developing responses to the initial findings. The initial findings include two possible clerical errors specific to individual students and four potential reporting issues. The university has 60 days to respond and provide any supporting documentation for DOE's consideration after which the DOE will issue its final findings in a subsequent Final Program Review Determination (FPRD) letter.

The university will continue to provide full support to the DOE during the course of the review and will provide updates to the Board as additional information is available.

Report on JLARC Recommendations to be Addressed by the Board of Visitors

FINANCE AND AUDIT COMMITTEE

August 2, 2016

This report provides an update on the implementation status of the seven JLARC recommendations to be addressed by the Board of Visitors.

Background

The 2012 General Assembly directed the Joint Legislative Audit and Review Commission (JLARC) to conduct a study on cost efficiency of public higher education institutions in Virginia and to identify opportunities to reduce the cost of public higher education in Virginia. The House Joint resolution that directed JLARC to conduct the study identified 14 areas to consider in its study including both academic and non-academic factors that affect the cost of higher education operations. The study was conducted over a period of two years and was completed on November 30, 2014. JLARC issued a total of five reports during the course of the study. The university has provided highlights from all of the reports at prior Board meetings. The fifth and final report titled "*Addressing the Cost of Public Higher Education in Virginia*" was issued on November 10, 2014.

JLARC issued a total of 32 recommendations and seven policy options in the five reports. Subsequent to the issuance of the fifth report, the Council of Presidents (COP) convened a meeting and created a subcommittee to develop unified higher education institutional positions on the JLARC recommendations. The subcommittee asked the finance officers from the higher education institutions to review the recommendations and propose a collective position for each of the recommendations for consideration by the COP.

The COP adopted the institutional position recommendations proposed by the finance officers. The recommendations were divided into two categories:

- Recommendations that could be implemented promptly, as determined by management. Of the 32 recommendations, the COP agreed that 17 recommendations could be implemented promptly, if the action was deemed appropriate by management. Examples of such recommendations include: a) disclosure and enhanced transparency of various fees assigned to students, b) institutional review of organizational structure, and c) standardized purchases of commonly procured goods, implementation of cooperative procurement, etc.
- Recommendations requiring further discussion and analysis to assess the ease or complexity of implementation and the impact on the diverse missions of Virginia public institutions. Examples of such recommendations include benchmarking of discipline-level faculty salary averages, imposing limitation on tuition and fee increases, etc.

General Assembly Actions

Prior to the start of the General Assembly session, the House of Delegates established a Higher Education Advisory Group to look at various higher education issues, including the JLARC reports. Upon request from the Advisory Group, the COP submitted the unified higher education institutional position paper to the General Assembly along with the finance officers' recommendations.

The approved budget passed by the General Assembly included language recommending implementation of a subset of the 17 JLARC recommendations listed by the financial officers as items that could be addressed in the short-term. The budget language included seven items which the General Assembly believed should be addressed by the Board of Visitors, to the extent practicable.

Status of Institutional Actions on the Outstanding Recommendations by General Assembly

Of the seven recommendations proposed by the General Assembly for Board's consideration, the university has fully implemented two recommendations; two recommendation significantly complete and remaining three in progress. The following table provides a summary of the implementation status of all recommendations.

Recommendation Numbers	Recommendation Category	Status
1	Display of tuition and fee including mandatory fees on university website and student invoices	Fully Implemented
2	Feasibility and Impact of raising additional revenue through campus recreation and fitness enterprises	Fully Implemented
3, 4, 5	Review of organizational structure including analysis of span of control	In Progress
6, 7	Standardization of Purchases of commonly procured goods and use of institution-wide contracts	Significant Completion

This report provides an update on the implementation status of the five outstanding recommendations. These recommendations are grouped into two categories.

Review of organizational structure including analysis of span of control

Status: In Progress

- 3. Recommendation: Direct staff to perform a comprehensive review of the institution's organizational structure, including an analysis of spans of control and a review of staff activities and workload, and identify opportunities to streamline the organizational structure.*

Boards should further direct staff to implement the recommendations of the review to streamline their organizational structures where possible;

- Virginia Tech established a cross-functional team comprised of Human Resources, IT, and Finance personnel to evaluate the current status of organizational structure, data availability, collection, and assessment, and review of existing span of control studies, etc.
 - The university completed the first phase of the project to populate the university's centralized Enterprise Resource Planning (ERP) system with the required data elements in order to create a consistent platform for conducting the span of control study. University departments reviewed the data sets for their respective areas for validation purposes to ensure data integrity for conducting the study. Completion of this work will enable the university to commence the organizational structure study.
- The university has decided to engage a consultant to conduct the second phase of the project. The second phase will include conducting an analysis of the current organizational structure to include layers and spans of control for the administrative functions, benchmarking of the structure and staffing practices against peer institutions and best practices, and developing practical recommendations for improvements in the organizational structure to meet departmental and institutional goals. Based on the results of the assessment, a recommended course of action and an implementation plan that meets the intent of this recommendation will be presented for consideration by the Board.
 - The university is currently reviewing proposals from two consulting companies for conducting the organizational structure study. The study is expected to commence in Fall 2016 and the university expects to report the results of the study to Committee at a future meeting.

4. Require periodic reports on average and median spans of control and the number of supervisors with six or fewer direct reports;

- Virginia Tech currently provides scorecard metrics on multiple academic and administrative measures. While the university recognizes the value in initial reporting of this information, the university will work with the Board members to evaluate if additional measures related to average and median spans of control should be an ongoing reporting metric.

5. Direct staff to revise human resource policies to eliminate unnecessary supervisory positions by developing standards that establish and promote broader spans of control. The new policies and standards should (i) set an overall target span of control for the institution, (ii) set a minimum number of direct reports per supervisor, with guidelines for exceptions, (iii) define the circumstances that necessitate the use of a supervisory position, (iv) prohibit the establishment of supervisory positions for the purpose of recruiting or retaining employees,

and (v) establish a periodic review of departments where spans of control are unusually narrow;

- Based upon the results of the university assessment on Recommendation #3 above, the university will evaluate if revisions to human resources policies are necessary.

Standardization of Purchases of commonly procured goods and use of institution-wide contracts

Status: Significant Completion

6. *Direct institution staff to set and enforce policies to maximize standardization of purchases of commonly procured goods, including use of institution-wide contracts;*

- Virginia Tech engaged Stonebridge Ventures Inc. to conduct a comprehensive, independent assessment of the current state of standardized procurement and the use of institution-wide contracts at the university. The company has extensive experience in comprehensive strategic sourcing, non-salary cost reduction and strategic procurement planning engagements for university, healthcare and Fortune 500 clients. Stonebridge also brings an in-depth understanding and experience in the higher education procurement environment.
- The scope of the engagement included:
 - Assessment of the current state of standardized procurement including analysis of percentage of university's expenditures "commonly procured" and the extent of standardization for procurement of such items
 - Evaluation of university's policies and practices for standardization against peer institutions and other industries
 - Additional opportunities for standardization – supplier consolidation, cooperative purchasing, product and service standards, etc.
 - Potential strategies for balancing the competing procurement goals for increasing standardization while maintaining local and SWAM (Small, Women-Owned, and Minority) procurement goals.
- Stonebridge Ventures Inc. completed the assessment and issued a final report in July, 2016. See attached Attachment A for an executive summary of the *Standardized Purchasing Review* report. The report provides an analysis of the current spend at Virginia Tech, extent of standardization, use of cooperative contracts; university's practices in comparison to peer institutions; and, provides recommendations for additional opportunities for standardization including development of a strategic supplier relationship program.

- The university has accepted the recommendations in the report and is developing a strategy to implement the recommendations to strengthen our strategic relationships and implement greater standardization when it is in the best interest of the university to do so.

7. Consider directing institution staff to provide an annual report on all institutional purchases, including small purchases, which are exceptions to the institutional policies for standardizing purchases.

- Virginia Tech currently provides scorecard metrics on multiple academic and administrative measures. While the university recognizes the value in initial reporting of this information, the university will work with the Board members to evaluate if additional measures regarding exceptions to institutional policies relating to purchasing should be an ongoing reporting metric.

Next steps

The university is working on the recommendations which are in progress and will continue to work with the Board and plan to bring back additional updates.



Standardized Purchasing Review

July 13, 2016

This report provides an overview of Virginia Tech's FY 2015 purchase order spend with a distillation of the key discussion points and recommendations regarding standardized purchasing practices. Effective spend management in higher education requires careful consideration of a number of factors that are not present in private industry. Virginia Tech engaged Stonebridge Ventures, Inc. to conduct a thorough and unbiased review of the University's practices in this area. This report outlines a standardized purchasing review framework and recommendations for improvement where appropriate.

STONEBRIDGE
VENTURES, INC.

(Previously Pathstone Partners)

EXECUTIVE SUMMARY

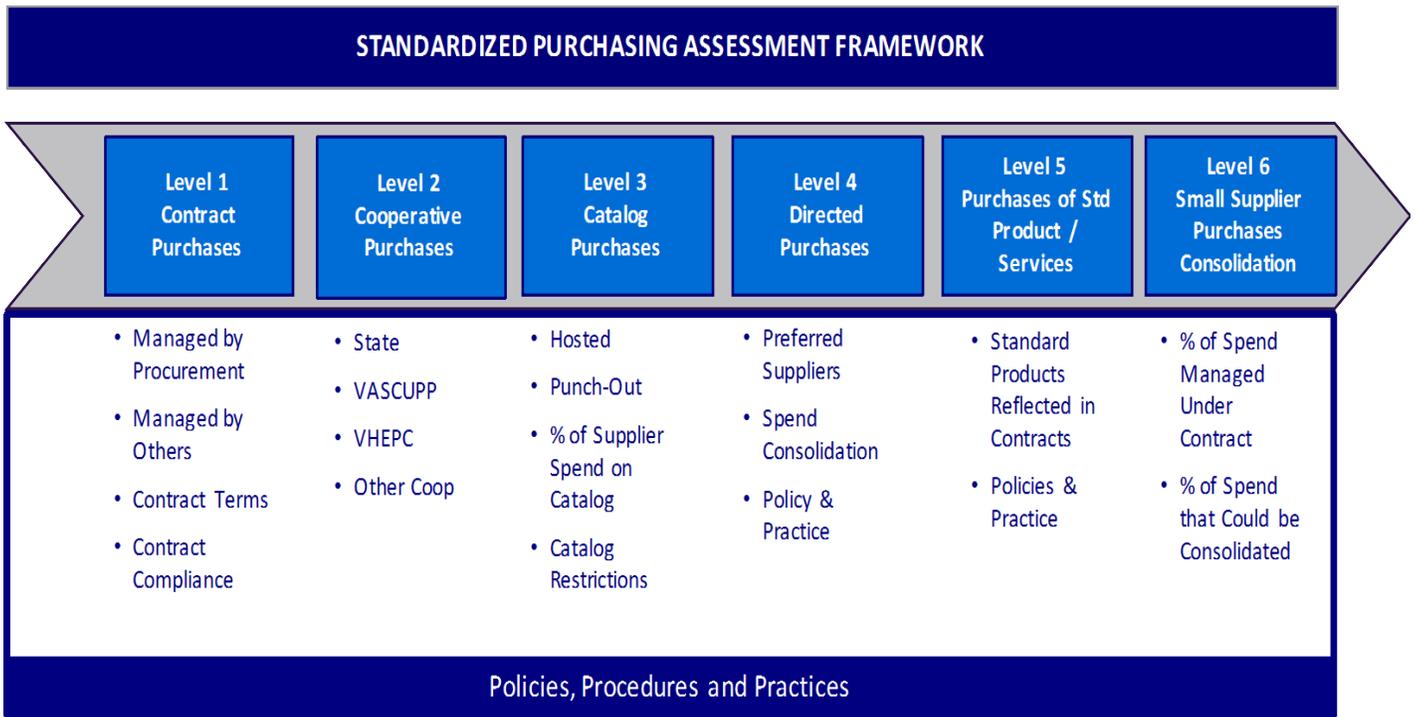
The question of whether Virginia Tech (VT) has appropriately standardized its purchasing is complex. In a FORTUNE 500 corporate environment we typically find a much smaller list of suppliers, highly standardized and directed spend practices including policy mandates and greater use of strategic or preferred suppliers to drive process efficiencies. These practices are facilitated by the pursuit of a single profit goal and highly competitive pressures. Higher Education faces a more complex purchasing environment in that we have a diverse stakeholder community that is pursuing basic research supporting a variety of individual and specialized goals. In addition, universities pursue difficult and competing objectives including affordable access for state citizens, growing the research enterprise and supporting diversity in the university’s supply base. In VT’s case there is the additional consideration of supporting local suppliers. These comments are not intended to suggest that VT should take a ‘hands off’ approach to the standardization of commonly procured items, rather we believe the appropriate answer must carefully consider all of VT’s goals and culture.

Project Approach

Stonebridge Ventures, Inc. (Stonebridge) approaches the assessment of standardized spend practices from two perspectives:

- 1) The primary mission of VT is to teach and conduct outstanding research. Attracting top flight faculty requires a degree of academic freedom and support. We believe in a general framework for universities that directs more standardized purchasing when goods and services are ‘administrative’ in nature, for example; office supplies, janitorial supplies, multi-functional devices, computers, etc. We believe greater choice and less standardization should occur when the spend categories are closer to the core teaching and research mission of the university, for example; scientific supplies & equipment, specialized computing, etc.

- 2) We assess standardized purchasing practices based on six (6) levels of performance that include:



Definition

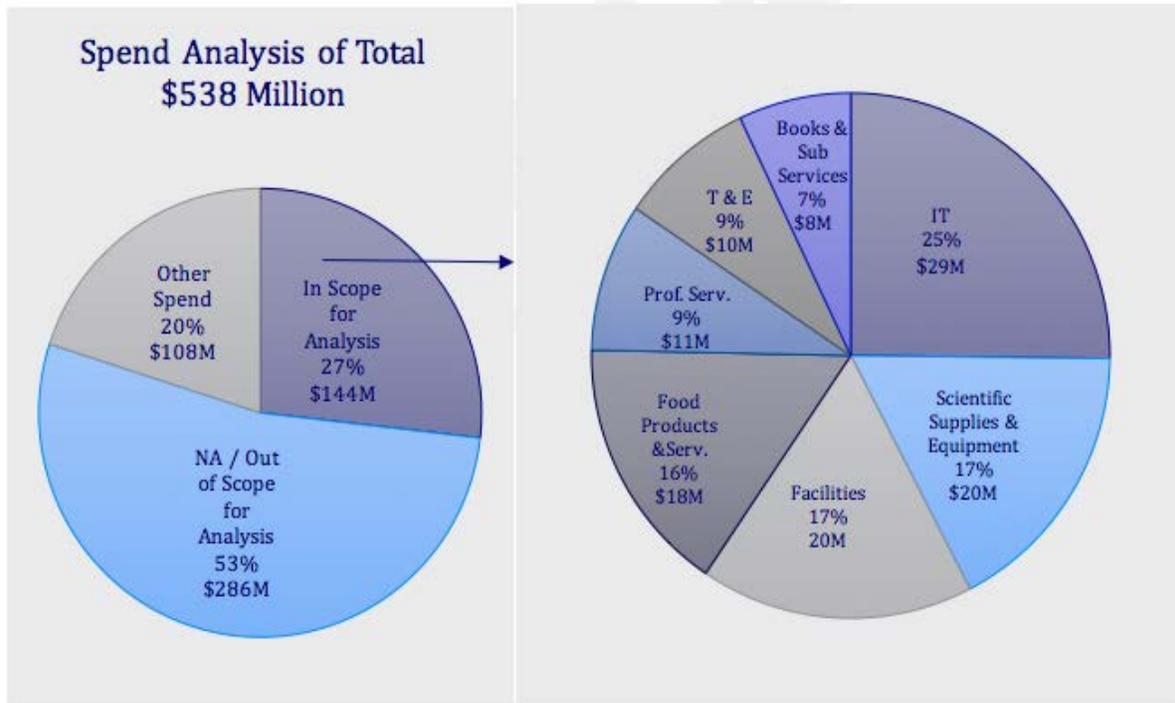
In order to assess VT’s performance it is important to clearly define what is meant by the terms ‘standardized purchasing’ and ‘commonly procured’. The Merriam-Webster dictionary definition of ‘**standardize**’ is “to change (things) so that they are similar and consistent and agree with rules about what is proper and acceptable.” There is a lean definition of ‘**standard work**’ from business which emphasizes “the most efficient method to produce a product or perform a service.” For purposes of this report VT is adopting elements of both of these definitions such that ‘**standardized purchasing**’ is the degree to which VT operates from a set of policies procedures and practices that promote efficient purchasing activity and reduces variability of suppliers, contracts, products purchased and services obtained.

The dictionary definition of ‘**common**’ is “belonging to or shared by two or more people or groups; done by many people; or occurring or appearing frequently.” In VT’s application we adopted a definition for ‘**commonly procured**’ as purchases with suppliers where the annual spend exceeded \$172,000 in FY2015 and the commodity area was in-scope for analysis. This allowed us to focus our review on suppliers that accounted for 80% of VT’s spend.

In Scope Spend

There is a significant amount of VT spend that is not in-scope for a standardized purchasing analysis. In FY2015, VT issued \$538M in purchase orders. About \$286M (53%) of this spend is for categories that are not in-scope (major capital construction, financial services, government payments, etc.) and approximately \$108M (20%) is for suppliers that do not fit our definition of ‘commonly procured’ (where the supplier’s annual spend is less than \$172,000). Removing these two large buckets of spend leaves \$144M (27%) in-scope for this analysis (see Chart 1 on page 5).

Chart 1- Virginia Tech Spend Analysis Breakdown, FY2015



Our analysis of VT’s standardization processes for this \$144M of in-scope spend yields the following general observations:

- VT has negotiated contracts on 59% of the in-scope spend. The availability of contracts facilitates a standardized purchasing process for the user community. VT compares favorably to its peers in this regard;
- Of all spend on contracts, 45% is on cooperative contracts. VT’s strategy and execution of cooperative contracting is evolving. Cooperative contracting, when properly deployed can reduce the amount of time that VT staff spend preparing and evaluating bids and proposals. VT compares favorably with its peers on the use of cooperative contracting.
- The University is a member of The Virginia Higher Education Purchasing Cooperative (VHEPC) which has the potential to provide significant value for VT and member institutions across the Commonwealth.
- VT utilizes its e-Procurement system (HokieMart) for 100% of spend and has enabled catalogs to facilitate the purchasing of \$30M or 21% of the in-scope spend and 59% of the in-scope purchase order volume. A robust catalog environment provides the most efficient and standardized purchasing process. The catalog suppliers also provide efficiencies by submitting electronic invoices that allow payment processing with limited staffing interaction. VT compares favorably to peers in its use of HokieMart and enabled catalogs.
- The amount of spend that is directed to ‘strategic’ or ‘preferred’ suppliers is the next level of consideration for standardized purchasing. VT has historically allowed more freedom of choice than peer institutions and does not direct spend through policy. We evaluated 14 spend categories on this dimension and find that although the policy environment has fostered choice, the actual practice shows a level of standardization consistent with peers. There is an opportunity for incremental improvement in a few commodity areas.
- VT has a large volume of suppliers with spend less than \$172,000 annually. Although the total spend is small, this group requires a disproportionate amount of time to manage. VT has an opportunity to further analyze this group for improvements.

Table 4 - Top 15 Virginia Tech Contracts (Non-Cooperative), FY2015

Vendor	Spend	Number of POs	Level 1 Category
US FOODS, INC.	\$ 12,127,640.79	1,301	Food Related Products & Services
FISHER SCIENTIFIC COMPANY LLC	\$ 3,691,442.87	6,883	Scientific Supplies & Equipment
OTIS ELEVATOR COMPANY	\$ 2,820,273.67	76	Facilities
APPLE INC	\$ 2,717,656.30	916	Information Technology
BMC - THE BENCHMARK MANAGEMENT COMPANY	\$ 1,396,036.90	182	Real Estate
SIEMENS INDUSTRY INC	\$ 1,285,396.31	79	Scientific Supplies & Equipment
LIFE TECHNOLOGIES CORPORATION	\$ 1,070,399.03	1,433	Scientific Supplies & Equipment
VERIZON WIRELESS	\$ 1,301,623.50	25	Telecommunications
INSTITUTION FOOD HOUSE INC	\$ 1,059,882.36	6	Food Related Products & Services
W&S PAINTING & CONSTRUCTION COMPANY INC	\$ 898,569.50	304	Facilities
GORDON FOOD SERVICE INC	\$ 861,062.70	15	Food Related Products & Services
COCA-COLA BOTTLING	\$ 1,066,374.83	3	Food Related Products & Services
SIMPLEXGRINNELL LP	\$ 754,166.70	228	Facilities
CLARK NEXSEN	\$ 736,264.83	13	Professional Services
QUALITY CUSTOM DISTRIBUTION SERVICES INC	\$ 630,432.41	3	Facilities
GLOBAL GEOPHYSICAL SERVICES INC	\$ 613,818.00	4	Scientific Supplies & Equipment

Current Practices

VT has constructed an excellent foundation of 'standardized' purchasing practices where all spend is managed through HokieMart and the user community utilizes purchase orders to buy what they need. There is a high percentage of user needs that are managed on contracts facilitated by the procurement department and a significant portion of these are electronically enabled on catalogs. Additionally, VT is committed to VHEPC and strategically involved in developing contracts that benefit the membership and promote standardization from a regional perspective. This program benefits VT and the individual members by avoiding duplication of effort in solicitation and contracting activity and also in consolidating spend for greater negotiation leverage.

Building from this foundation, VT can enhance its level of directed spend by developing a strategic supplier relationship program. Stonebridge's experience suggests that VT has an opportunity in certain key relationships to extract additional value for the university. We also believe that VT can take the next step in working to standardize more products and services purchased within key contracts. This activity goes hand in hand with the development of a strong strategic supplier relationship program and contributes to enhanced value from key contracts.

Our recommendations for improvement in the detailed attributes of standardization may challenge VT's historically conservative culture of allowing freedom of choice. However, our suggestions are in line with and based on experience with other similar higher education institutions.

BACKGROUND AND PERSPECTIVE

Legislative Background

In 2012 the General Assembly directed the Joint Legislative Audit and Review Committee (JLARC) to conduct a study on the cost efficiency of public higher education institutions in Virginia. JLARC issued 32 recommendations covering a number of areas and policy options. Specific to the contents of this report there was a recommendation to "direct institution staff to set and enforce policies to maximize standardization of purchases of commonly procured goods, including use of institution-wide contracts."

Virginia Tech Objectives

VT contracted with Stonebridge to conduct a thorough assessment of purchasing policies and practices as they relate to standardized purchasing of commonly procured items in order to factually respond to the JLARC recommendation and to undertake actions deemed appropriate based on the review.

Other Considerations

There is often a presumption that to '*standardize*' is good and the alternative is bad. In public higher education the evaluation of whether standardization is good is more nuanced. Universities operate in an environment of competing goals. For example, there are often goals to achieve greater spend through diversity and / or local suppliers and these objectives can be at odds with increasing standardization. Additionally, the university's primary mission is to teach and conduct research. To reach a level of excellence in these activities requires greater degrees of choice and enforcing standardization may jeopardize this environment. These comments are not meant to imply that VT should do nothing and allow employees to purchase in any way they want, but rather to recognize the complexity and acknowledge the need for careful deliberation and evaluation of facts to determine the best course of action for VT.

CONCLUSION

Our assessment initially sought to find answers to the following questions:

1. What percentage of VT's spend is commonly procured and of this amount how much has been standardized? **Answer: Based on data analysis we conclude that approximately 27% of dollars or \$144M from a total of \$538M qualifies as commonly procured. Of the \$144M commonly procured spend, 59% is on negotiated contracts with 45% of this total on cooperative purchasing contracts of one type or another. VT manages 21% of the in-scope purchases on e-Procurement catalogs in HokieMart.**
2. What further opportunities for standardization exist (supplier consolidation, cooperative purchasing, product and service standards and other)? **Answer: there are incremental opportunities to improve supplier consolidation in selected spend categories. Individual travel reimbursements were not considered in-scope for this analysis, but may warrant further examination. There are 22,000+ suppliers with spend less than \$172,000 and VT will benefit from analyzing these purchases for consolidation and workload reduction opportunities. VT has opportunities to direct spend to strategic suppliers and can work to define greater levels of product standardization in selected contracts. Initiating a Strategic Supplier Relationship Management program for this purpose will pay dividends.**
3. How should VT address and balance competing procurement objectives for increasing standardization while also maintaining local and SWAM goals? **Answer: VT should engage in a dialog on these competing priorities and come to a policy resolution concerning them. Stonebridge does not believe that Swam or local suppliers should win business if they are significantly more expensive, provide inferior service or their quality standards are not high. In our experience, universities typically give weight to local or SWAM suppliers in competitive bid opportunities where multiple factors are considered beyond price. Procurement has an important role to identify the amount of cost savings foregone by selecting local or Swam suppliers. The Executive team should consider policy direction regarding how much cost savings or price gap is acceptable in order to pursue local and SWAM goals.**
4. How does VT's approach to standardization compare and contrast with peers and entities outside of higher education? **Answer: VT compares favorably with peers across levels 1, 2 and 3 of the Stonebridge Standardization Framework. A large percentage of spend is managed on contracts and a significant portion of those are cooperative contracts. Additionally, a large portion of spend and purchase orders flow through electronic catalogs which is the most efficient and standardized method to procure goods and services. VT can improve its level of directed spend and its level of standardized products within contracts as mentioned throughout this report. However, we consider these observations to be incremental and not major opportunity gaps.**
5. What percentage of VT spend is on cooperative contracts? Are these contracts advantageous to VT and is there an opportunity to enhance this activity? **Answer: Currently, 52% of contracted spend is from cooperative agreements. VT has a strong commitment to cooperative purchasing and is working closely with Virginia Higher Education Procurement Consortium (VHEPC) to increase this activity. Understanding that the VHEPC is early in its formation (started in April, 2014), Stonebridge strongly supports the potential of the VHEPC, and advises that a strategic plan be drafted to guide the activity**

of the group. Reviewing the University of Texas Supply Chain Alliance strategic plan would be an excellent start.

ABOUT STONEBRIDGE VENTURES (formerly Pathstone Partners)

Company Overview

Stonebridge is dedicated to assisting clients with procure to pay solutions in higher education. We are strong advocates for the value that Procurement can bring to university campuses. Our only interest is to be of service, to add value and to help clients achieve their goals. We work with you to create customized solutions. When you hire Stonebridge you will get personalized, senior level attention. Jim Knight will be leading and providing a substantial amount of the work on your project.

Jim Knight Bio

Jim is the President and founder of Stonebridge Ventures, Inc. He has more than 30 years of consulting and business experience and has placed particular emphasis on the higher education industry in the past 13 years. Jim has led several comprehensive strategic sourcing, non-salary cost reduction and strategic procurement planning engagements for university, healthcare and Fortune 500 clients. Throughout his career Jim has been a frequent pioneer of developing new service offerings and tackling his client's most pressing issues. Jim is a frequent speaker at higher education industry events.

Jim's passion to deliver substantial value in partnership with his clients and with 100% focus on higher education was a motivating force behind his drive to start Stonebridge Ventures. He believes that strong collaborative client relationships produce substantial and sustainable results. Jim spent 10 years at Huron Consulting Group where he was one of the initial Managing Directors. Jim was instrumental in helping Huron grow its strategic sourcing practice and later the procurement solutions practice for higher education.

Career Highlights

- Founder, Stonebridge Ventures, Inc.
- Co-Founder, Pathstone Partners LLC
- Managing Director, Huron Higher Education
- Initiated and grew the Higher Education Procurement Solutions Practice, Huron Consulting
- Key leader in building the Strategic Sourcing practice, Huron Consulting
- A "founding" Managing Director, Huron Consulting
- Senior Manager, Arthur Andersen Business Consulting
- 13 years of healthcare operational experience
- Began consulting career at Andersen Consulting (Accenture)

Education and Certification

- Master of Business Administration, University of Nebraska
- Bachelor of Arts, Economics, University of Nebraska

Recent Speaking Engagements:

- **NAEP Annual Meetings** (2013, 2014, 2015, 2016) – Innovators Forum Updates and Various Panel Discussions
- **NAEP District VI** (Tucson, 2012) – Making the Business Case for Supplier Relationship Management
- **NAEP Annual Meeting** (Denver, 2010) – Best Practices with Suppliers
- **SciQuest Next Level** – (Raleigh, 2010) – Look Beyond Price for Real Savings Opportunities
- **SCTEM Annual Meeting** (New Orleans, 2010) – Improving Travel Management

- **NAEP Annual Meeting** (Providence, 2009) – Emerging Thoughts on Strategic Sourcing for Major and Minor Construction
- **NAEP Annual Meeting** (Austin, 2008) – Portfolio Procurement Methodology™ An Approach to Strategic Sourcing
- **NAEP Annual Meeting** (March, 2007) – Procurement Leadership: Going to the Next Level
- **SciQuest Next Level** – (January, 2007) – Strategic Procurement: A Pathway to Excellence

Client Services & Historical Projects

Strategic Procurement Planning / Procure to Pay Assessments

- University of Colorado
- University of Florida
- Cornell University
- Oregon State University
- Stanford University
- University of California, San Diego
- University of Texas, El Paso
- University of Texas, Medical Branch (Galveston)
- Clemson University
- Wake Forest University

Spend Analytics and Strategic Sourcing Plans

- University of California System
- University of Colorado
- University of Minnesota

Strategic Sourcing Execution

- Cornell University
- University of North Carolina, Chapel Hill
- University of Colorado
- Florida State University
- Notre Dame
- Penn State
- Boston College

Construction Spend Assessment and Category Planning

- University of Colorado
- Emory University
- University of California System
- Johns Hopkins Health System

Travel Assessment, Category Plan, Sourcing

- Notre Dame
- University of Colorado
- Penn State

Strategic Procurement Training Workshops

- National Association of Educational Procurement
- Indiana University
- Virginia Higher Education Procurement Cooperative
- Johns Hopkins Health System

- Penn State
- University of Minnesota

Report on Higher Education Restructuring Institutional Performance Standards

FINANCE AND AUDIT COMMITTEE

July 20, 2016

Background

In 2005, the Virginia General Assembly passed the Restructured Higher Education Financial and Administrative Operations Act (Restructuring Act). This Act provided restructuring benefits and allowed all Virginia institutions of higher education to have more responsibility for their financial and operational activities.

For Virginia Tech, the Act also provided the opportunity to apply for additional “Level 3” authority and responsibilities. In 2005, Virginia Tech entered into a Management Agreement with the Commonwealth of Virginia under the Restructuring Act, offering increased management autonomy in exchange for high level accountability in several performance areas.

The Management Agreement became effective on July 1, 2006. It provides the university greater autonomy in the areas of capital outlay, leasing, procurement, information technology, finance, and human resources. This autonomy has enabled the institution to implement revised financial and administrative policies and business practices in specified areas to proactively address the needs of the institution. The Management Agreement was initially approved for a period of four years. Subsequently, legislation was approved granting the continuation of the Management Agreement. The 2014 General Assembly renewed the Level 3 restructured institutions’ Management Agreements for an indefinite period. Along with Virginia Tech, the University of Virginia, the College of William and Mary, and Virginia Commonwealth University were also granted Level 3 restructured status.

Accountability is an important part of the Restructuring Act, and all institutions of higher education have a common set of performance measures to achieve. The Institutional Performance Standards (IPS) are the primary performance metrics evaluated under the Restructuring Act. Until fiscal year 2010, the State Council of Higher Education of Virginia (SCHEV) annually assessed the degree to which individual public institutions of higher education met the financial and administrative management and education-related performance benchmarks set forth in the Appropriation Act in effect. The university provided an annual report to the committee on the status of compliance with these measures.

The Higher Education Opportunity Act passed in 2011 suspended the assessment of IPS measures until the Higher Education Advisory Council (HEAC) completed its review of the IPS measures and recommended a new set of reporting measures. In May, 2011 SCHEV certified all institutions as meeting the IPS measures for the 2011-12 to 2013-14 period. The 2013 General Assembly incorporated the recommended changes to the IPS measures proposed by HEAC in the Appropriation Act. The number of measures were reduced, and the assessment period changed from an annual reporting period to a biennial reporting period. The revised IPS measures continue to focus on two primary areas:

- **Academic Measures:** There are six education-related measures with a focus on enrollment. SCHEV monitors institutional compliance with these measures and has broad authority to certify institutions as having met these standards. In addition, SCHEV may develop, adopt, and publish standards for granting exemptions and ongoing modifications to the certification process.
- **Finance and Administrative measures:** There are 17 finance and administrative measures. HEAC retained all the finance and administrative measures from the previous reporting cycle. The Secretary of Finance through the Department of Planning and Budget (DPB) is responsible for monitoring institutional compliance with these measures.

Current Status of Performance Measures

- **Academic Measures:** SCHEV has performed the 2016 biennial assessment of the academic related measures. In May 2016, SCHEV reported that Virginia Tech has met all six academic standards. *Attachment A* details the six academic related measures and Virginia Tech's performance for the 2016 Biennial Assessment Results as reported by SCHEV.
- **Finance and Administrative Measures:** In July 2016, the university provided a report on the performance of the finance and administrative measures to the Secretaries of Finance, Administration, and Education. *Attachment B* provides a summary of the results reported to the state. Of the 17 measures, the university is in full compliance with 16 measures; for the one measure where the university did not meet the stated goal, additional explanations were provided as detailed below.

Capital Outlay Standards

The Capital Outlay standard, *capital outlay projects completed within budget*, (Item 5.a. on *Attachment B*), requires reporting on completed capital projects with an individual cost of over \$1 million. Effective July 2011, Virginia Tech Board of

Visitors approved an increase in the capital project threshold from \$1 million to \$2 million. This increase was pursuant to the 2011 General Assembly increasing the dollar component on the state capital projects from \$1 million to \$2 million. Hence, the performance for the capital project standard included in the attachment includes results for capital projects over \$2 million.

The university had four capital projects that reached substantial completion in fiscal year 2015. Of the four projects, two projects exceeded the budget established during the preliminary design stage. The Center for the Arts project encountered unexpected and unprecedented site conditions that tripled the foundation costs and extended the construction schedule by over six months. These additional costs were incurred during the construction phase to compensate the contractor for added foundation costs and associated construction delays required to address poor subsurface conditions that were not identified in the geotechnical report during the design phase. These unexpected costs were not part of the project budget established at preliminary design, and the budget was increased by \$4.8 million or 4.3 percent to fund these costs. The entire increase was covered by nongeneral funds.

The Davidson Hall Improvements project incurred additional costs during the construction phase to compensate the contractor for the removal of unanticipated contaminated soils and construction delays associated with the late delivery of certain materials. The total project costs increased by \$833,626 or 2.7 percent compared to the budget established during the preliminary design phase. Upon review from the Bureau of Capital Outlay Management (BCOM), additional 21st Century Bond funds were infused to fund the unforeseen expenses. BCOM issued a Revised Funding Report on August 4, 2014 that reflects the additional funding.

The university believes that the circumstances in each of the situations provides reasonable explanation for the departure from the desired goal.

SCHEV is scheduled to perform an institutional assessment of the IPS measures by October 2016. The university believes it will be considered in compliance for these measures when the State Council makes its final determination of compliance by Spring 2017.

**Academic Performance Standards
2016 Biennial Assessment Results***

(Using 2013 Projections for 2013-14 and 2015 Projections for 2014-15 for PMs 1 - 4)

Institution	PM 1		PM 2		PM 3		PM 4		PM 5	PM 6
	13-14	14-15	13-14	14-15	13-14	14-15	13-14	14-15	Biennium	Biennium
VT	100.4	100	99.5	97.9	108.7	104.7	104.2	100.8	190	65

Performance Measures:

PM 1 - Institution meets at least 95 percent of its State Council-approved biennial projections for in-state undergraduate headcount enrollment.

Projections compared to Fall Headcount file

PM 2 - Institution meets at least 95 percent of its State Council-approved biennial projections for the number of in-state associate and bachelor degree awards.

Projections compared to Degrees Conferred file

PM 3 - Institution meets at least 95 percent of its State Council-approved biennial projections for the number of in-state STEM-H associate and bachelor degree awards.

Projections compared to Degrees Conferred file

PM 4 - Institution meets at least 95 percent of its State Council-approved biennial projections for the number of in-state, upper level - sophomore level for two-year institutions and junior and senior level for four-year institutions - program-placed, full-time equivalent students.

Projections compared to Course Enrollment file

PM 5 - Maintain or increase the number of in-state associate and bachelor degrees awarded to students from under-represented populations.

Actuals derived from the 2013-14 and 2014-15 Degrees Conferred Files and the last five years of financial aid data files prior to degree award.

Averages for the biennial period (13-14 and 14-15) under review were compared to averages of prior three-years (10-11, 11-12, and 12-13).

PM 6 - Maintain or increase the number of in-state two-year transfers to four-year institutions.

Actuals derived from the 2013-14 and 2014-15 Course Enrollment files (CE) and CE files from 5 yrs prior, Degree Conferred Files up to 10 yrs prior.

Averages for the biennial period (13-14 and 14-15) under review were compared with base year (10-11) figures.

**As reported to Virginia Tech by SCHEV in May, 2016*

Virginia Tech
Higher Education Restructuring Institutional Performance Standards
2014-15

	Measure	Metric Definition	Performance Goal	FY 2015 Performance	Result
1. Financial					
a.	Audit of Financial Statements	An unqualified opinion from the Auditor of Public Accounts upon the audit of the public institution's financial statements.	Full Compliance	Full Compliance	●
b.	Audit Deficiencies	No significant audit deficiencies attested to by the Auditor of Public Accounts.	Full Compliance	Full Compliance	●
c.	Financial Reporting Standards	Substantial compliance with all financial reporting standards approved by the State Comptroller.	Full Compliance	Full Compliance	●
d.	Accounts Receivable Standards	Substantial attainment of accounts receivable standards approved by the State Comptroller, including but not limited to, any standards for outstanding receivables and bad debts.	Full Compliance	Full Compliance	●
e.	Accounts Payable Standards	Substantial attainment of accounts payable standards approved by the State Comptroller including, but not limited to, any standards for accounts payable past due.	Full Compliance	Full Compliance	●
2. Debt Management					
a.	Bond Rating	The institution shall maintain a bond rating of AA- or better	Aa3/AA-	Aa1 Rating - Moody's	●
b.	Investment Returns earned on operating cash balances over rolling three-year period	The institution achieves a three-year average rate of return at least equal to the imoney.net money market index fund	0.02%	0.20%	●
c.	Debt burden ratio	The institution maintains a debt burden ratio equal to or less than the level approved by the Board of Visitors in its debt management policy.	≤7%	4.27%	●
3. Human Resources					
a.	Turnover percent as an indicator of classified staff stability and satisfaction	The institution's voluntary turnover rate for classified plus university/college employees will meet the voluntary turnover rate for state classified employees within a variance of 15 percent	7.60%	6.98%	●
b.	Number of internal employee transfers and promotions as a percentage of total number of newly-hired, transferred and promoted	The institution achieves a rate of internal progression within a range of 40 to 60 percent of the total salaried staff hires for the fiscal year	40%-60%	58.70%	●

	Measure	Metric Definition	Performance Goal	FY 2015 Performance	Result
4. Procurement					
a.	SWAM Participation	The institution will substantially comply with its annual approved Small, Women and Minority (SWAM) procurement plan as submitted to the Department of Minority Business and Supplier Diversity; however, a variance of 15 percent from its SWAM purchase goal, as stated in the plan, will be acceptable	≥85%	104.0%	●
b.	Procurement orders process through the Commonwealth's enterprise-wide internet procurement system (eVA)	The institution will make no less than 80 percent of purchase transactions through the Commonwealth's enterprise-wide internet procurement system (eVA) with no less than 75 percent of dollars to vendor locations in eVA	80% - Transactions 75% - Dollars	83% - Transactions 82% - Dollars	●
5. Capital Outlay					
a.	Capital projects within budget ⁽¹⁾	The institution will complete capital projects (with an individual cost of over \$1,000,000) within the budget originally approved by the institution's governing board at the preliminary design state for projects initiated under delegated authority, or the budget set out in the Appropriation Act or other Acts of Assembly which provides construction funding for the project at the preliminary design state. If the institution exceeds the budget for any such project, the Secretaries of Administration and Finance shall review the circumstances causing the cost overrun and the manner in which the institution responded and determine whether the institution shall be considered in compliance with the measure despite the cost overrun	100%	50% ⁽²⁾	●
b.	Owner requested change orders	The institution shall complete capital projects with the dollar amount of owner requested change orders not more than 2 percent of the guaranteed maximum price (GMP) or construction price	≤2%	≤2%	●
c.	Competitive rates for leased office space	The institution shall pay competitive rates for leased office space - the average cost per square foot for office space leased by the institution is within 5 percent of the average commercial business district lease rate for similar quality space within reasonable proximity to the institution's campus	5%	18.8% below market	●
6. Information Technology					
a.	Project Management	The institution will complete major information technology projects (with an individual cost of over \$1,000,000) on time and on budget against their managed project baseline.	100%	100%	●
b.	Information Security	The institution will maintain compliance with institutional security standards as evaluated in internal and external audits. The institution will have no significant audit deficiencies unresolved beyond one year	Full Compliance	Full Compliance	●

NOTES:

(1) The university capital project threshold was revised from \$1 million to \$2 million effective July 1, 2011. This change was pursuant to the State increasing its capital project threshold

(2) Two of four capital projects were not completed within budget. Additional information is provided in the Letter to the Secretary of Finance.



VirginiaTech
Invent the Future



Report on the Development of Cost Containment Opportunities

August 29, 2016

M. Dwight Shelton, Jr., VP for Finance and
Chief Financial Officer

Background

- During a prior Board meeting, the Committee members expressed interest in the development of analytical and reporting processes that would provide insight into the operational performance of specific operating units of the university, with an emphasis on the academic programs.
- In March 2015, the university developed a report to introduce the cost structure of the university and the current status of the cost management strategies and outcomes.
- Members of the Finance staff have researched and collected data to assist in measuring performance and operating results for units within the university.

Current Status

- The university has continued the data collection and analysis process.
- While the university's systems are not designed to produce reports in the manner envisioned, progress is being made to aggregate and analyze data and create reports to be able to view and interpret revenue, activity, and expenditure areas.
- As a result, we are working with the Provost's staff to see if the results of the Finance work can help inform the academic model results, in terms of performance measurement.

Work Results through the Summer of 2016

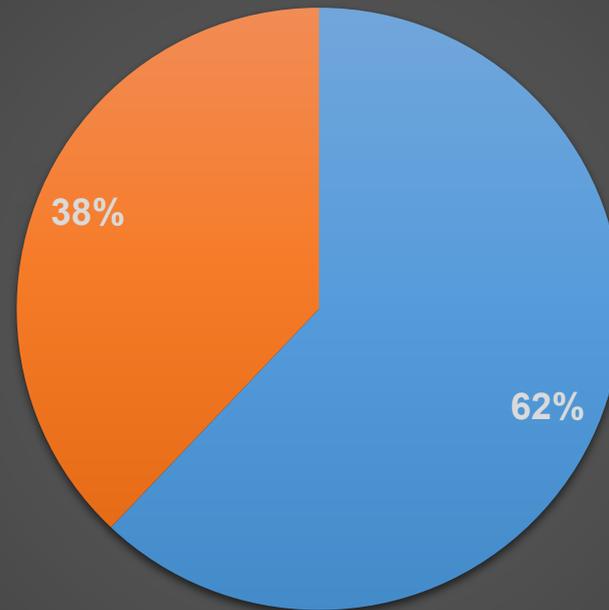
- The following slides reflect the beginning efforts toward development of the needed data and report presentations.
- These slides reflect the initial analysis efforts, but are not refined at the level that can be applied to actual operating units.
- In addition, a scan of the external environment reveals that some private businesses that support higher education are developing data collection, analysis, and reporting models that might be able to increase the pace of our work.
- As a result, while our internal work is continuing, we plan to explore the external market and to talk with firms that have products that can supplement the work currently underway.

Explanation of Data Sources and Presentation of Data

- The institution presents financial and operational data in various ways to accommodate the requirements of a number of stakeholders, including the following:
 - Accrual based costing for financial statements
 - Direct, indirect, and imputed research costs for National Science Foundation research reporting
 - Cost basis expenditures for internal financial operating reports
- The analyses in this presentation represent cost basis expenditures extracted from the Banner ERP system, which are equivalent to the operational data presented in the Financial Performance Report.

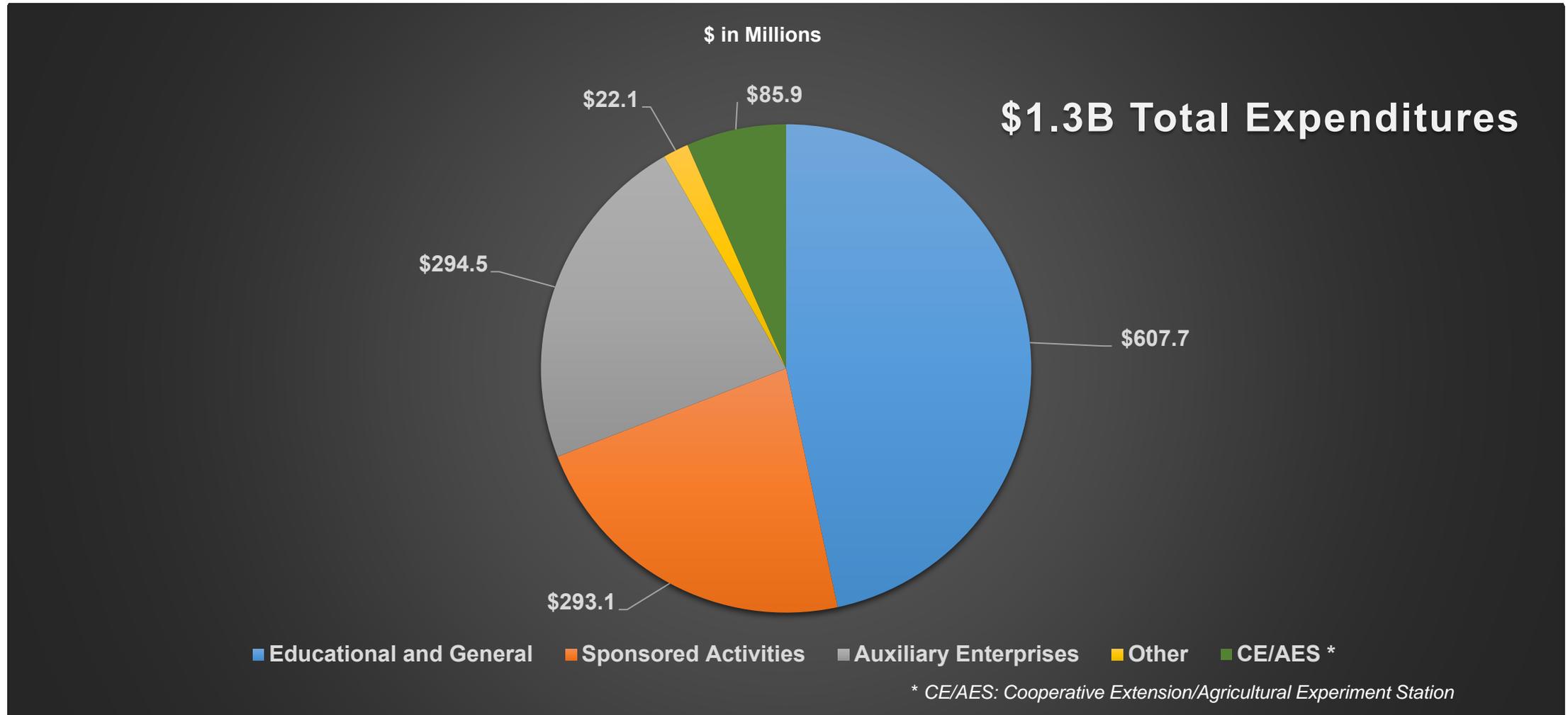
University Operating Expenditures: Labor and Operations Fiscal Year 2015

\$1.3B Total Expenditures



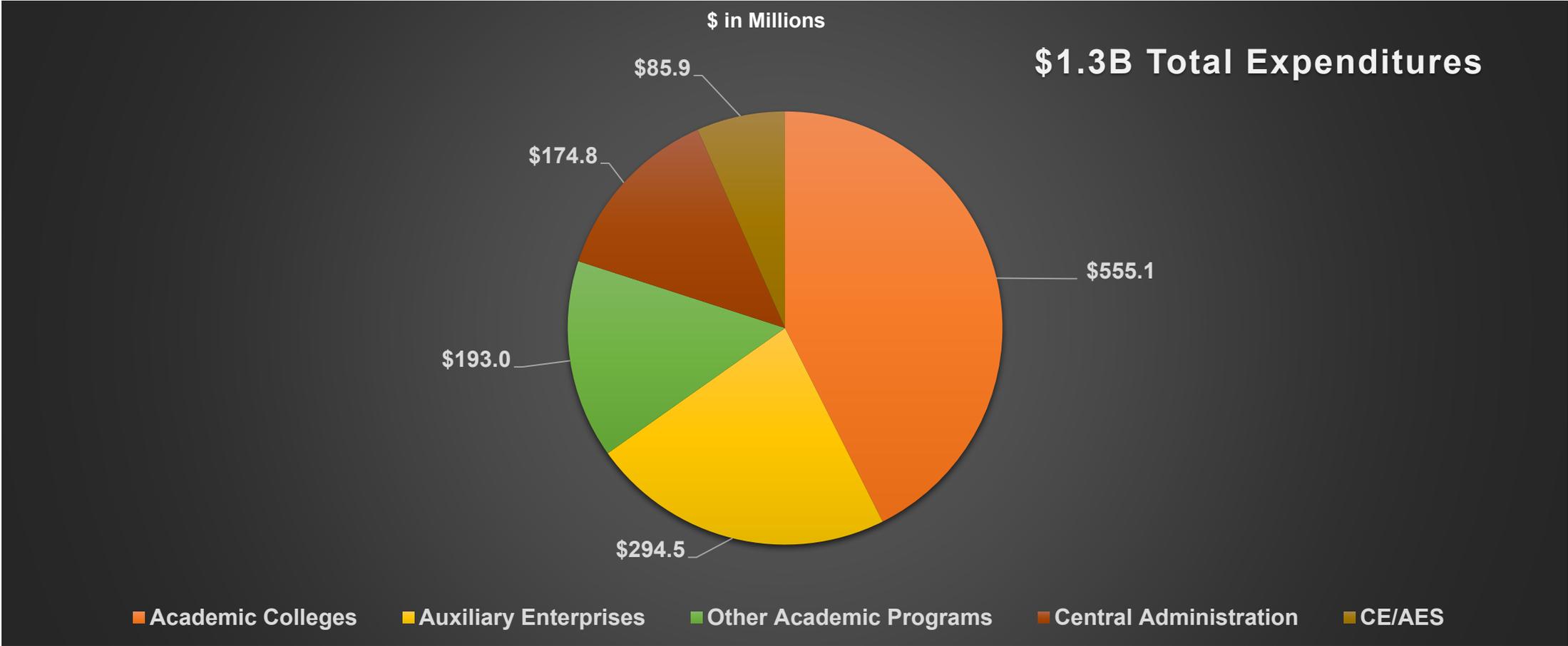
■ Labor ■ Operations

Higher Education Breakout of Major Program Spending Fiscal Year 2015

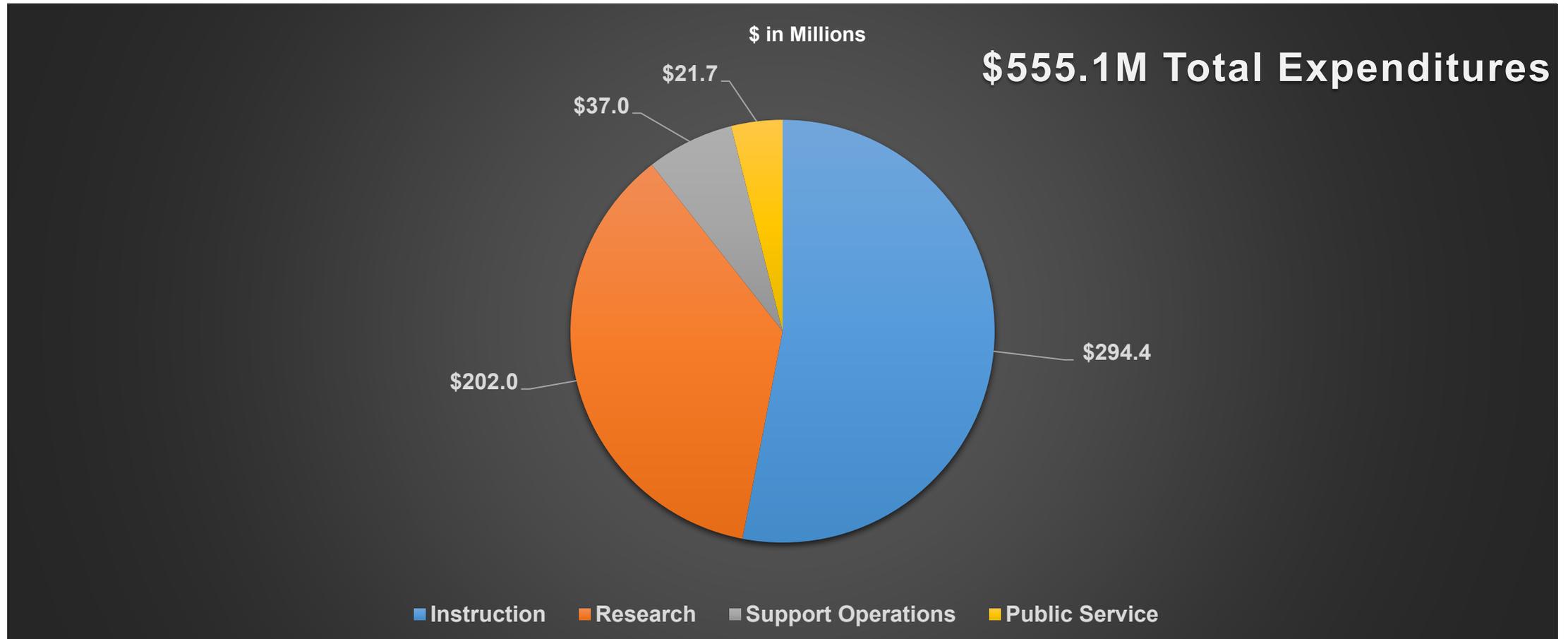


Spending Organized by Major Operating Areas

Fiscal Year 2015



Academic College Spending by Core Services Fiscal Year 2015



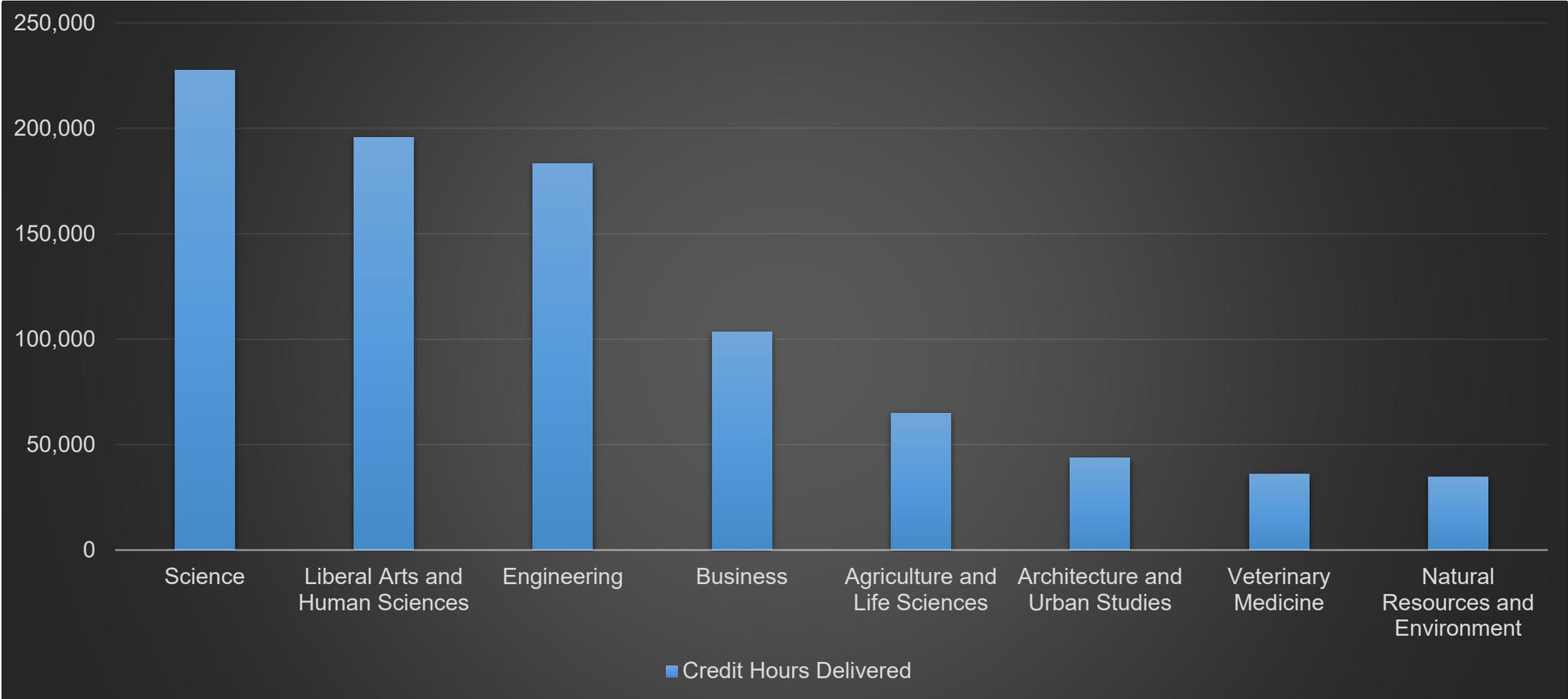
Illustrative Cost and Operational Performance Metrics of Academic Units

Select cost and operational performance metrics to measure academic activity:

- Cost per credit hour
- Credit hours per section
- Externally funded research dollars
- Externally funded research ratio

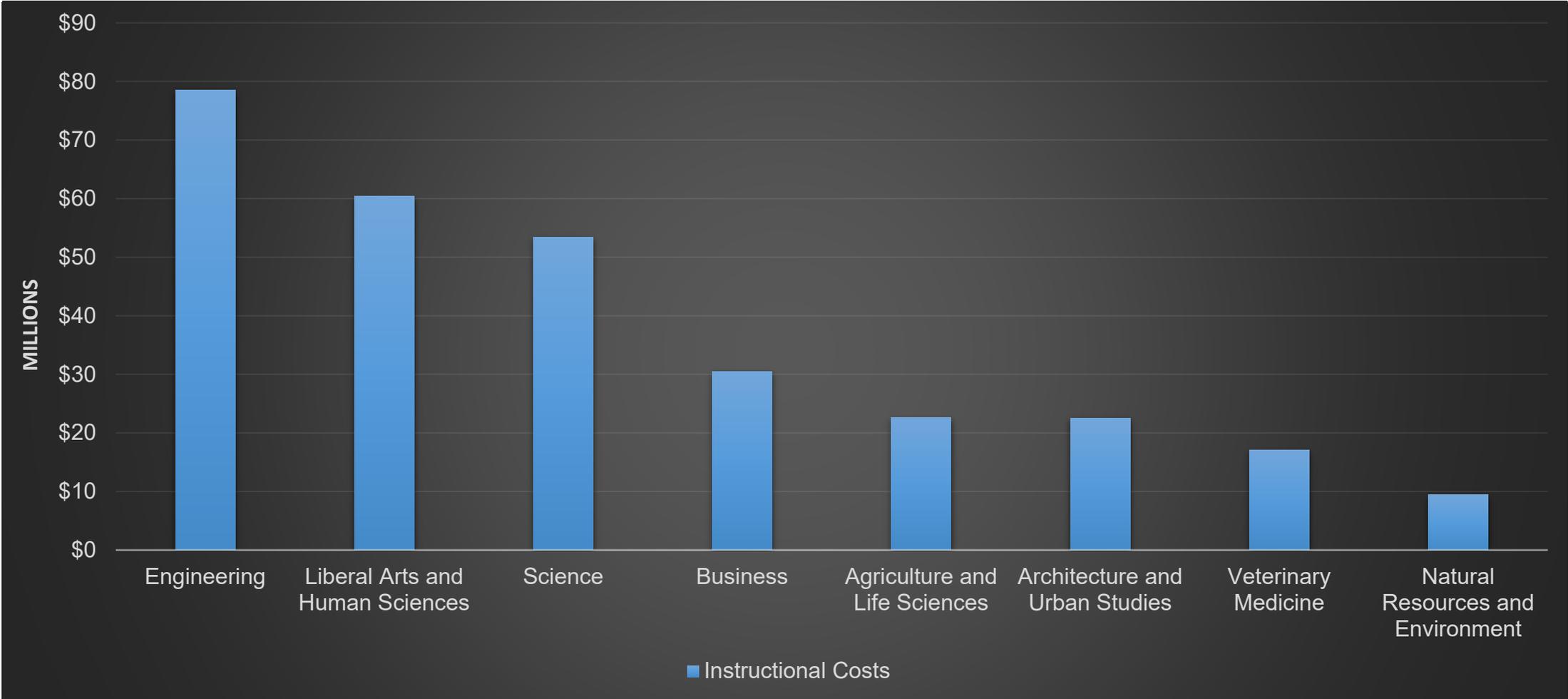
Volume of Credit Hours Delivered

Fiscal Year 2015



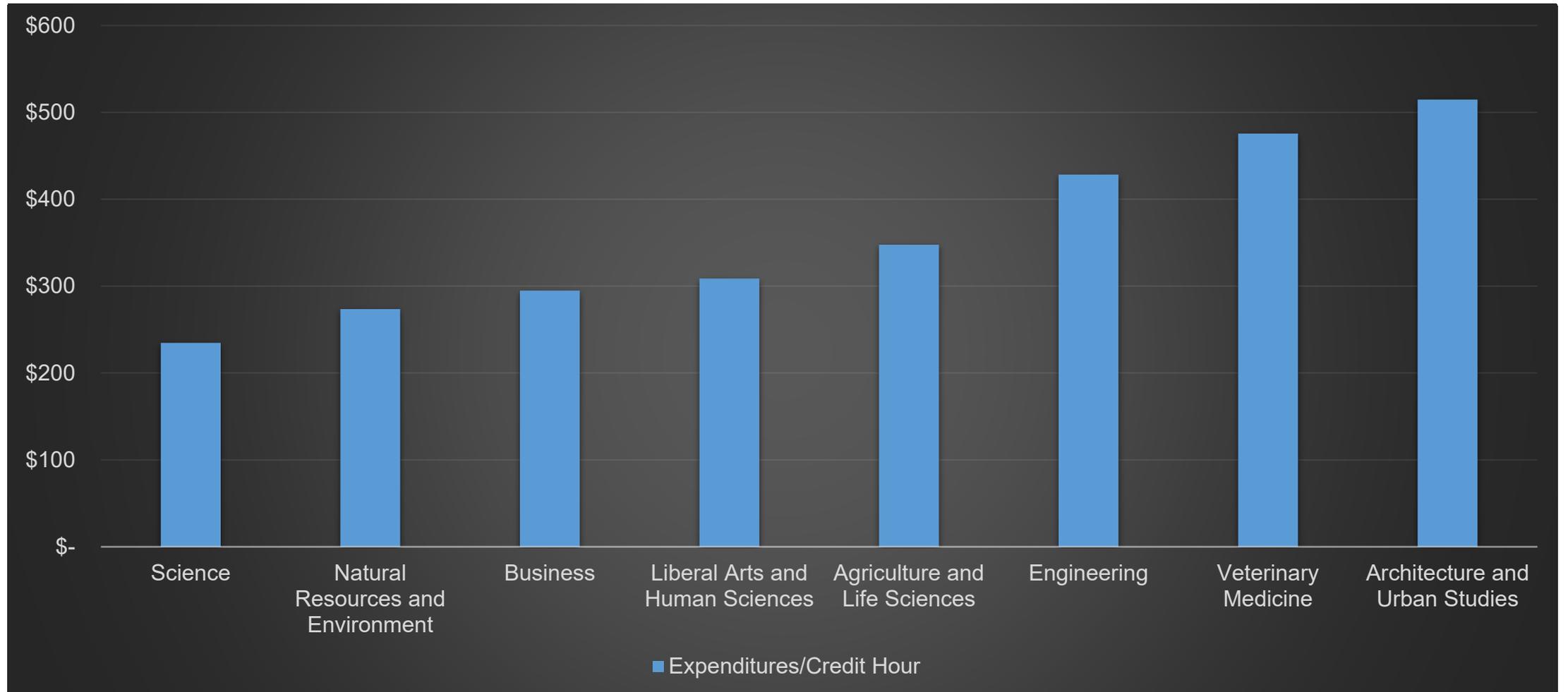
Instructional Expenditures to Deliver Credit Hours

Fiscal Year 2015

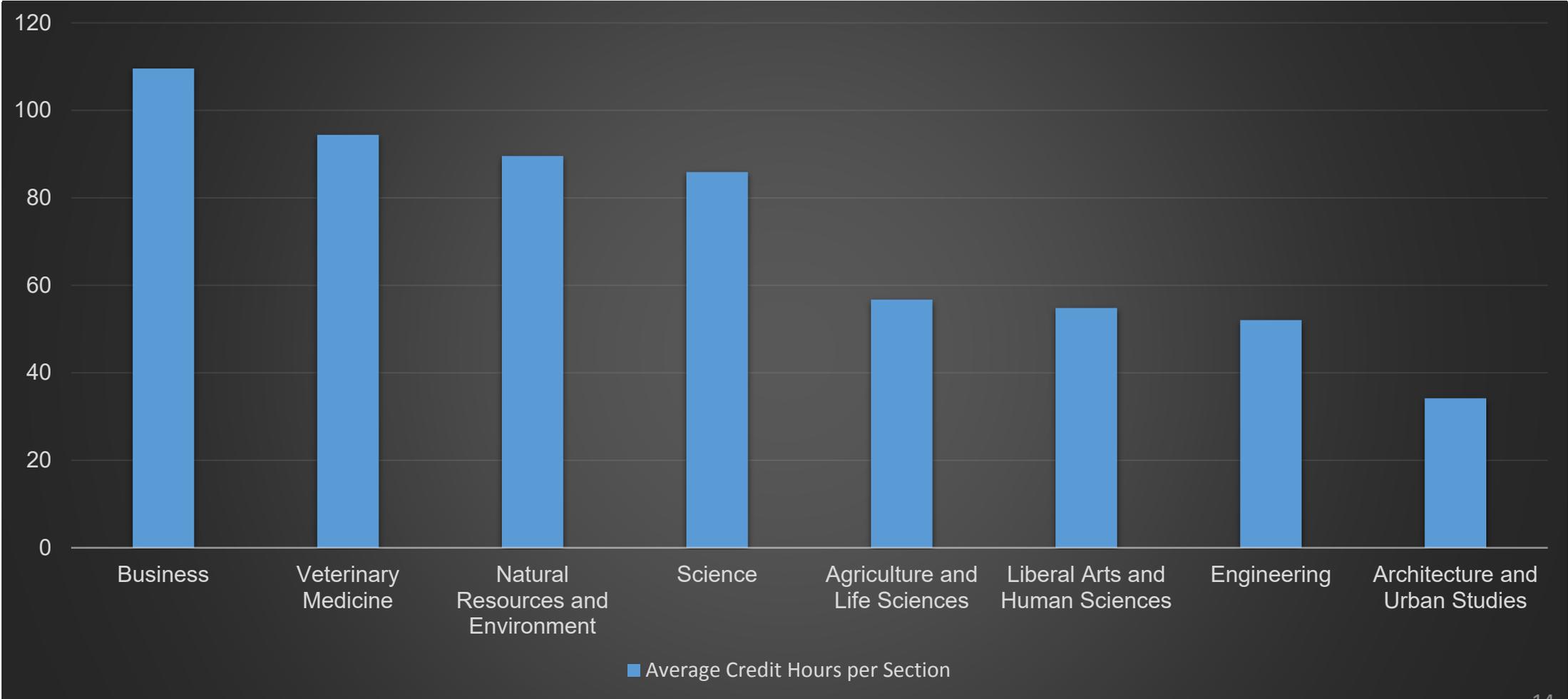


Expenditures per Credit Hour

Fiscal Year 2015

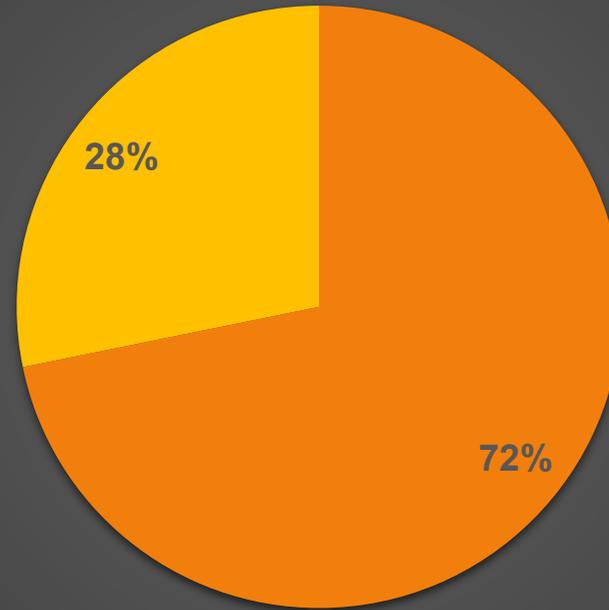


Credit Hours per Section (Average Section Size) Fiscal Year 2015



Research Spending Fiscal Year 2015

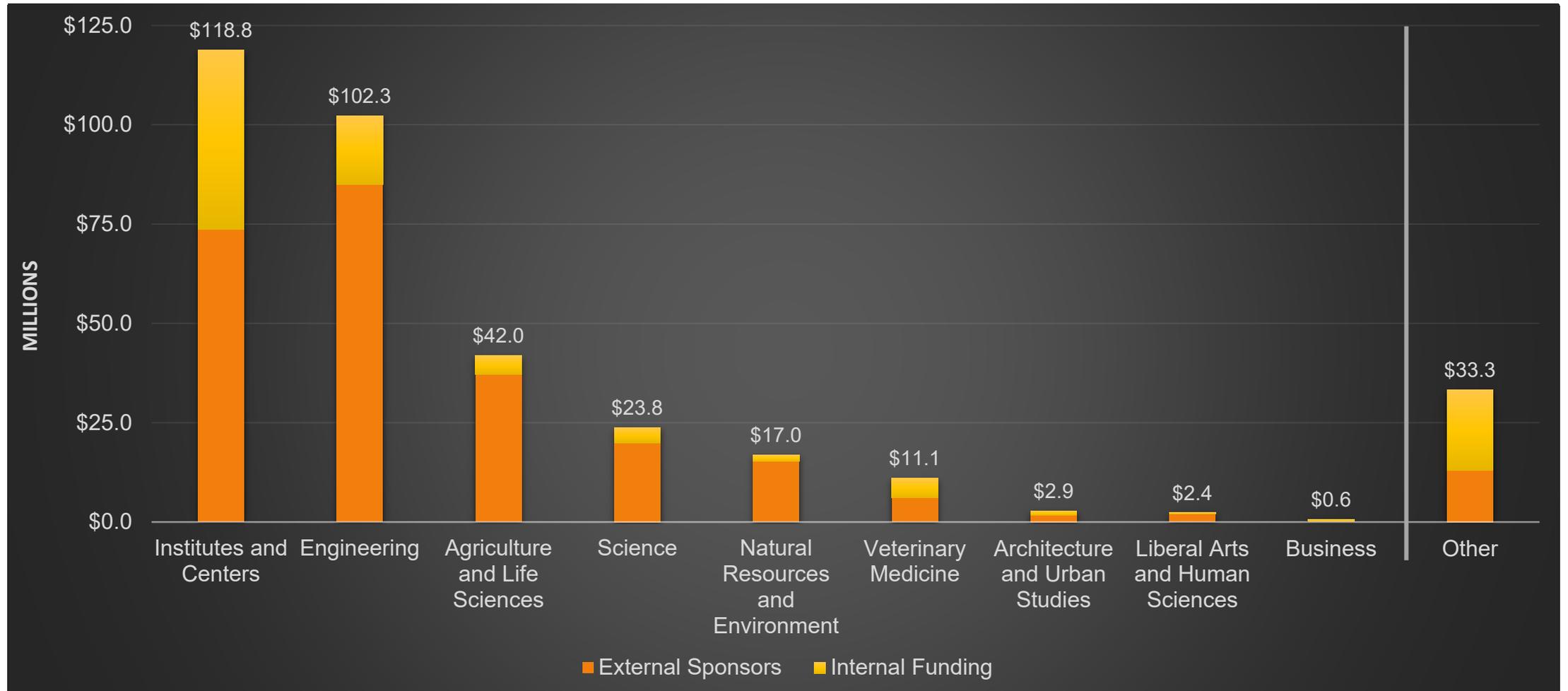
\$354M Total Expenditures



■ Externally Sponsored ■ Internally Funded

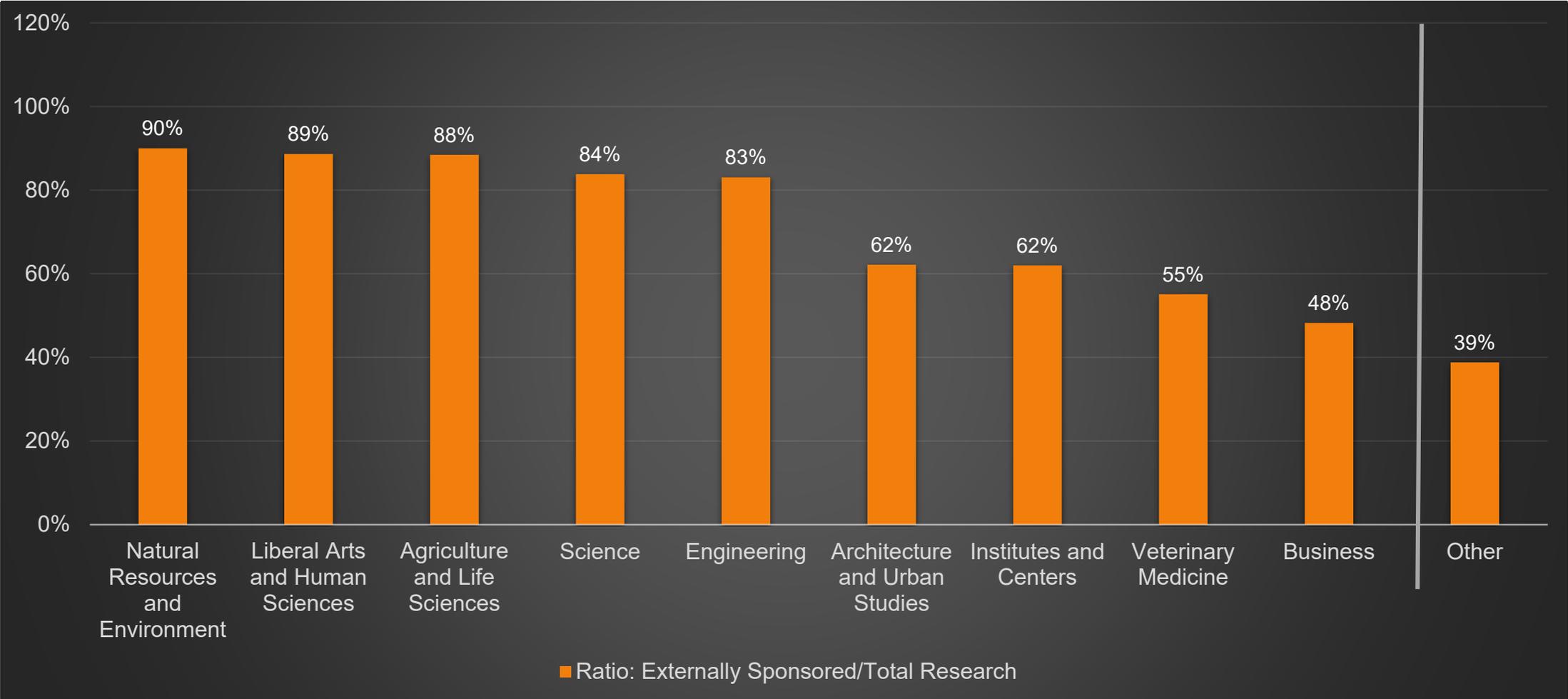
Research Spending by Unit

Fiscal Year 2015



Externally Funded Research Ratio

Fiscal Year 2015



Future Actions

- Finance Staff will continue our work to pursue both internal and market-supplied report options.
- We believe this work will continue during the next year, and will be influenced by the new budget model.
- The Finance staff will prepare a follow-up report to the Committee when sufficient progress is achieved on the reporting options either developed by or available to the university.

Overview of University Related Corporations

FINANCE AND AUDIT COMMITTEE

July 18, 2016

During the June 2016 Board meeting, the Finance and Audit Committee requested information regarding university related corporations. In response to the request, this report provides an overview of the university related organizations, organizational reporting structure, and key activities of certain major related organizations.

Background

University related corporations are separate, independent organizations established for a defined purpose and for the primary benefit of the university and its constituents. At Virginia Tech, the related corporations have been created for multiple purposes including the management and investment of private gifts, fundraising operations, the acquisition and management of real estate, pursuing specialized research activities, development and holding of information technology assets, and supporting business opportunities and ventures, etc. The Board of Visitors approves the creation of new university related corporations through the approval of the Affiliation agreement. The Affiliation agreement establishes the relationship between the university and the related corporation and outlines the responsibilities of each entity. All related corporations have a Board of Directors that provide oversight over the operations of the organization.

Attachment A presents the organizational reporting structure of university related corporations and *Attachment B* displays the Virginia Tech Foundation related entities.

Related Corporations - Key Activities

Virginia Tech Foundation, Inc.

The Virginia Tech Foundation Inc. (Foundation) receives, manages, and disburses private gifts and assets on behalf of the university and undertakes major projects as requested by the university. The major functions of the Foundation include fund management, real estate development, and support of university initiatives. As displayed in *Attachment B*, the Foundation has a number of additional corporations in its portfolio including the Virginia Tech Corporate Research Center, Olivio Ferrari Foundation, and the Hotel Roanoke LLC. The university has established an Affiliation agreement with the Foundation and all Foundation subsidiaries are covered under the agreement. Hence, separate agreements are not required with the subsidiaries of the Foundation.

Virginia Tech Alumni Association, Inc.

The Alumni Association facilitates communications between alumni, students, parents, faculty, and the public; it also coordinates and promotes alumni chapter activities and alumni events.

Virginia Tech Athletic Fund, Inc.

The Virginia Tech Athletic Fund was created to raise private contributions in support of athletic scholarships, programs, and facilities.

Virginia Tech Applied Research Corporation (VT-ARC)

VT-ARC's primary mission is to pursue externally funded applied research opportunities that are not reasonable to be conducted within the university because of factors such as cost accounting requirements, business risk, and joint ventures.

Virginia Tech Innovations Corporation (VTIC)

VTIC develops and provides services related to emerging technologies furthering the scientific research, clinical, educational, and economic development goals of the university and others. VTIC has subsidiary organizations involved in tire and automotive research and development which are covered under its Affiliation agreement. Hence, separate agreements are not required with the subsidiaries of the VTIC.

Virginia Tech Services, Inc.

Virginia Tech Services Inc. operates the campus bookstores, vending, and provides supplies and other services to the university community. Any surplus funds generated by Virginia Tech Services Inc. are utilized or designated for student-related purposes such as scholarships and facility improvements.

Virginia Tech Corps of Cadets Alumni, Inc.

The Virginia Tech Corps of Cadets Alumni Inc. promotes and enhances the Corps program by raising scholarship funds.

Virginia Tech Intellectual Properties (VTIP)

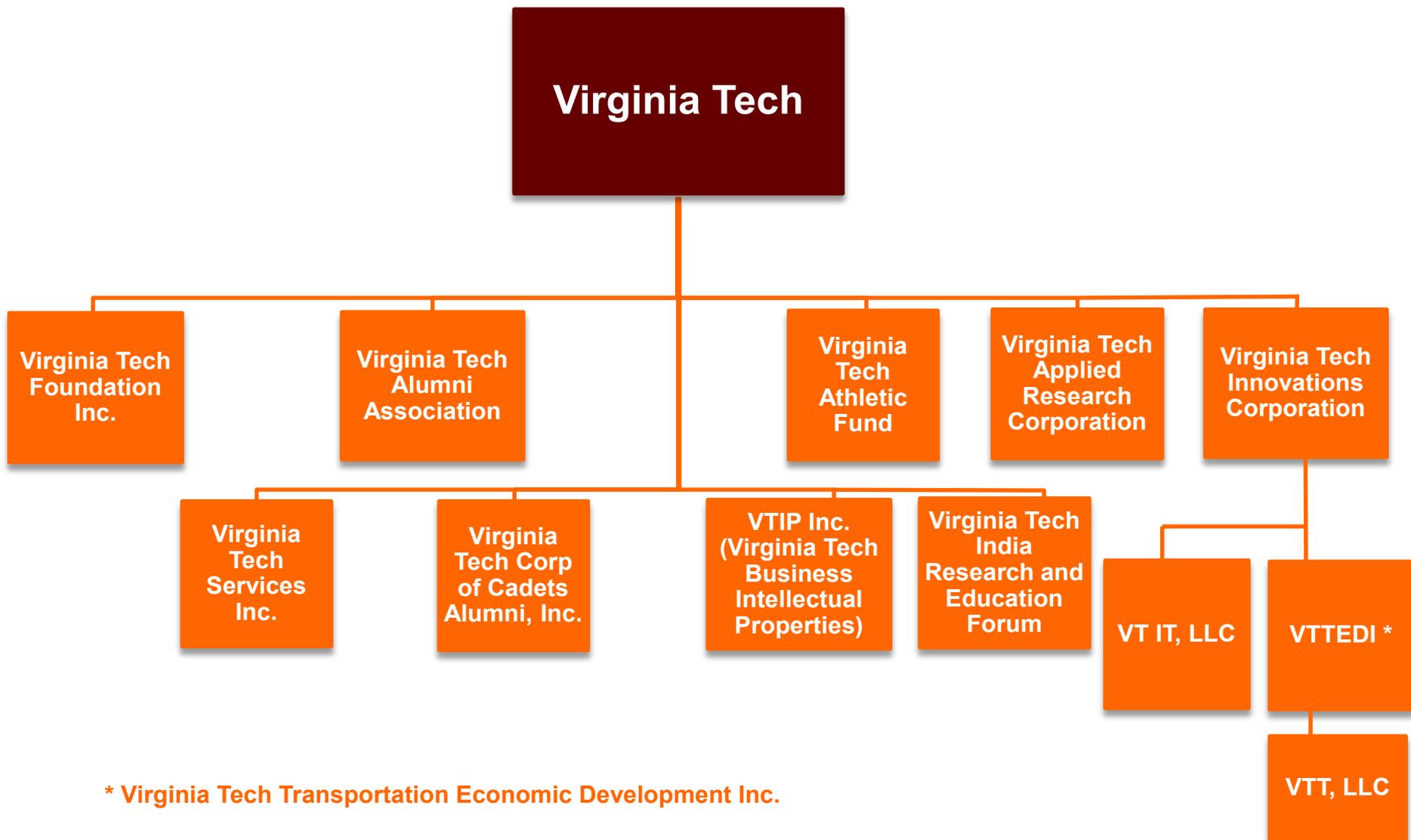
The Virginia Tech Intellectual Properties protects, licenses, and commercializes intellectual properties originating within the university.

Virginia Tech India Research and Education Forum (VTIREF)

VTIREF was created to foster scientific and technological engagement and graduate education in the area of science, technology, engineering, mathematics, architecture and urban studies, and other areas; and establish educational and research partnerships with the private sector, universities, and research institutes in India.

University related corporations serve a critical and important role in enabling the university to achieve its objectives in providing services to the students, faculty, staff and community. A separate corporate structure is more appropriate due to the nature of operations of these organizations.

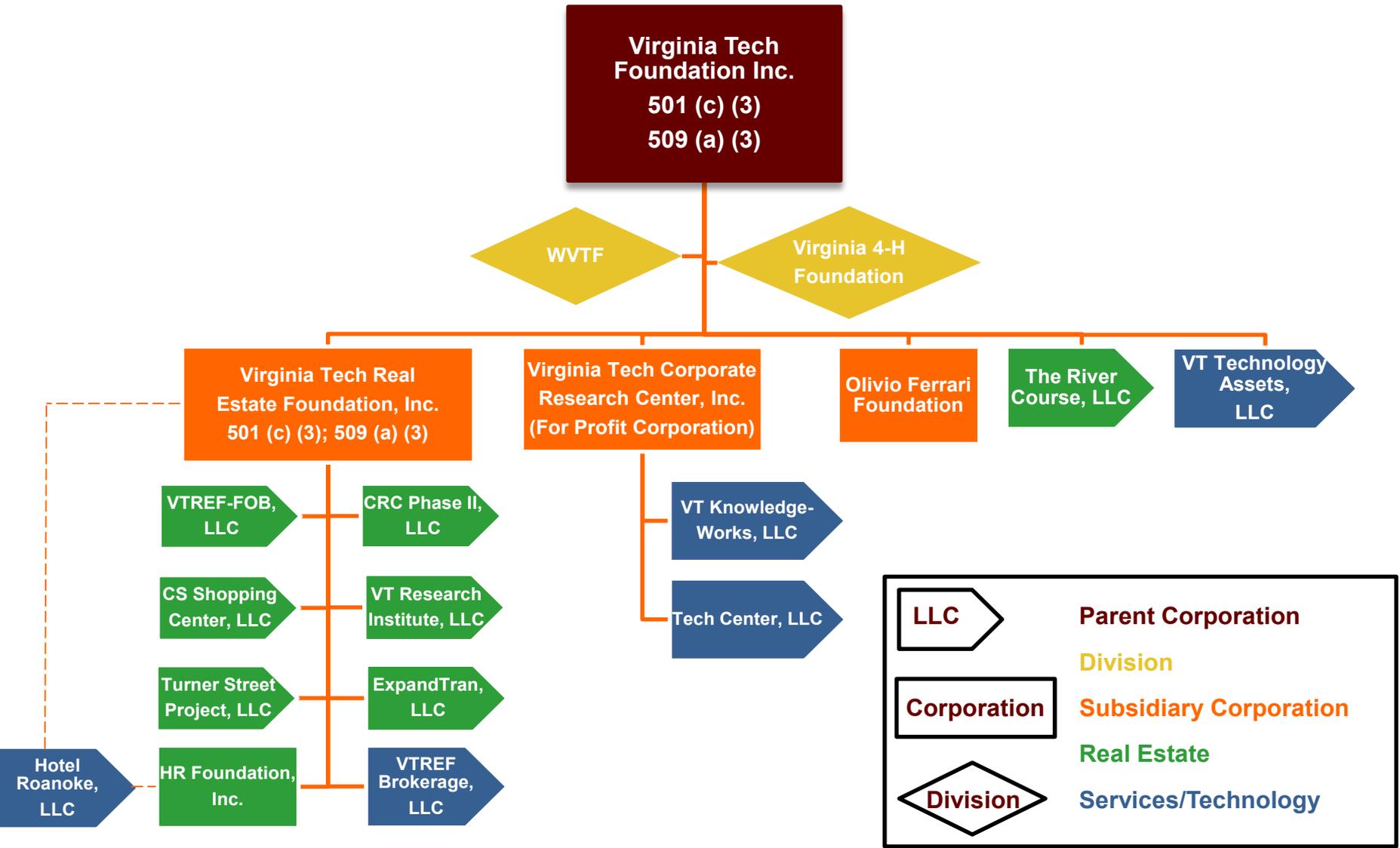
Virginia Tech – Related Corporations



* Virginia Tech Transportation Economic Development Inc.

Virginia Tech Foundation Inc.

Related Entities





Financial Performance Report

Fourth Quarter 2015-16

Tim Hodge, Assistant Vice President for
Budget and Financial Planning

August 29, 2016



Overview

- The university continuously monitors financial performance
- Each quarter the university provides the Board with an update on financial performance
- The annual budget represents the university's projection of operations
 - The original budget is as reviewed with the Board in June
 - The adjusted budget is revised as new information becomes available



E&G Operating Budget

Annual Budget Change

- University Division
 - Recap: \$16.5M increase in tuition due to strong fall 2015 and spring 2016 enrollment
 - 4th Quarter Adjustments:
 - Virginia Racing Revenue: \$77k increase due to higher than projected receipts
 - Other E&G Income: \$176k increase due to higher than projected miscellaneous fees
 - Equine Medical Center: \$300k increase due to higher than projected case loads

Performance

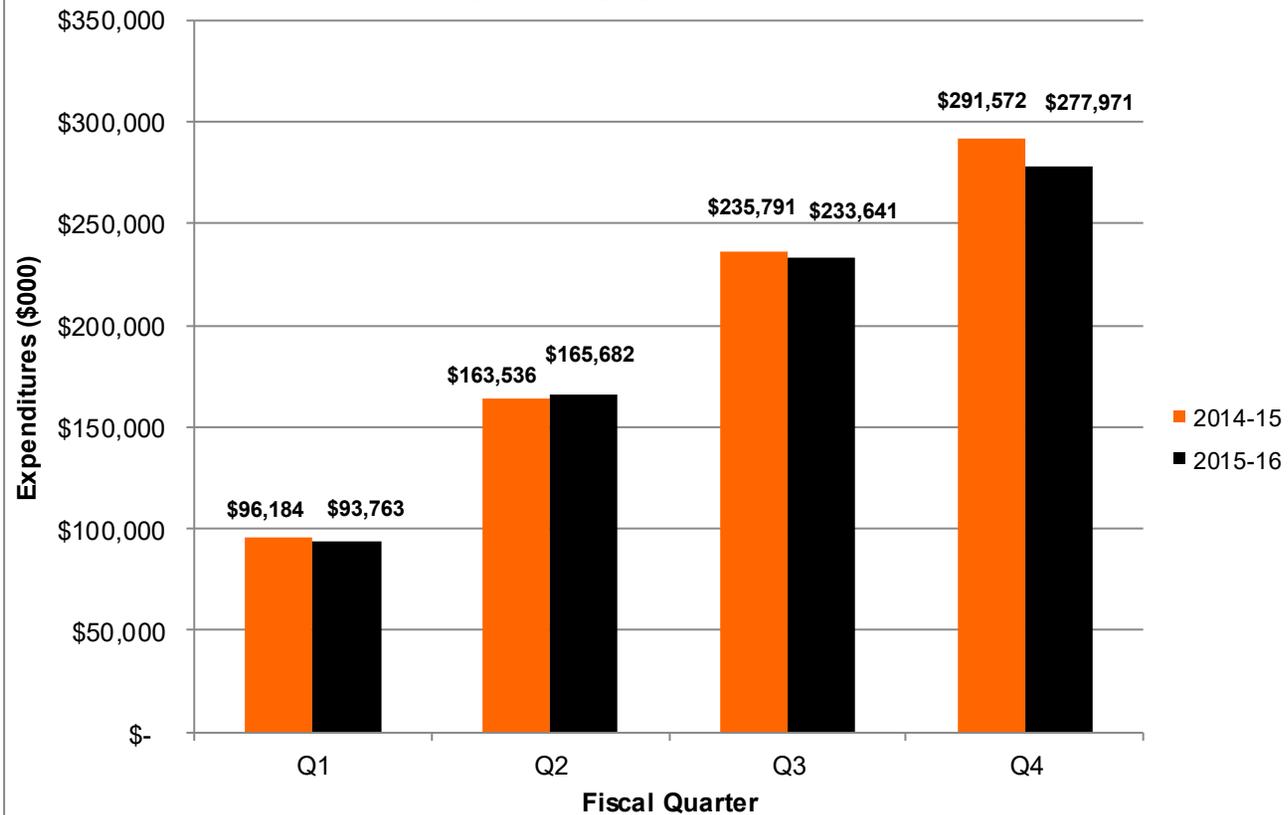
- University Division
 - Achieved annual revenue budget; expenditures on target
- Cooperative Extension/Agricultural Experiment Station (CE/AES)
 - Delayed timing of \$2.8M Federal receipts

Successfully closed fiscal year: E&G funds were fully utilized

- Balance in E&G due to timing of activities: \$19K Continuing Education and (\$2.8M) Federal Funds



Sponsored Programs Expenditures 2014-15 to 2015-16





Auxiliary Enterprises

Key Annual Budget Changes

- Residential & Dining: \$1.75M for O'Shaughnessy Project Planning
- Athletics: \$1.6M in adjustments

Performance

- Revenues: Achieved overall budget.
- Expenses: Temporary year end savings due to timing of projects and payments in process (carryover):
 - Residential & Dining - \$6M facility related projects
 - Other projects in progress: \$2.5M (Athletics, Electric Service, Telecom, Student Engagement, etc.)
- Reserve drawdowns for year of \$6.1M Residential and \$4.5M Athletics
- Overall: Units finished the year in good financial position



Capital Outlay

- **Total capital program level currently authorized**
 - \$548.9 million over several years
- **Cumulative program expenses**
 - \$359 million inception-to-date
- **Significant total program adjustments**
 - Projects approved at the June 2016 Board meeting and added to the report:
 - ❖ Planning for Undergraduate Science Laboratory Renovations



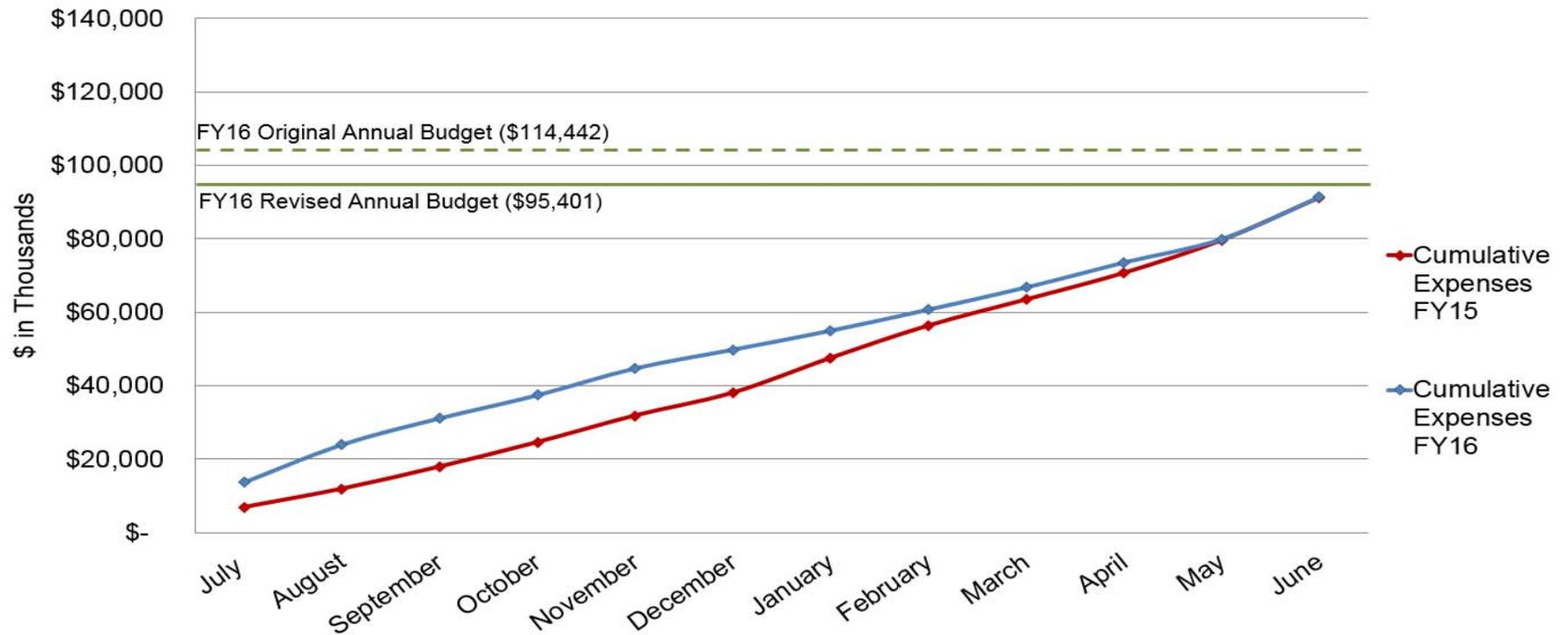
Capital Outlay

- **Revised Annual capital budget as of fourth quarter**
 - \$95.4 million
- **Annual expenses as of fourth quarter**
 - \$91.3 million
- **Annual budget adjustments this quarter**
 - No Significant annual budget adjustments this quarter.



Capital Outlay Trends: Annual Performance

CAPITAL PROGRAM ANNUAL PERFORMANCE
Cumulative Monthly Expenditures
Fiscal Year 2015 and Fiscal Year 2016





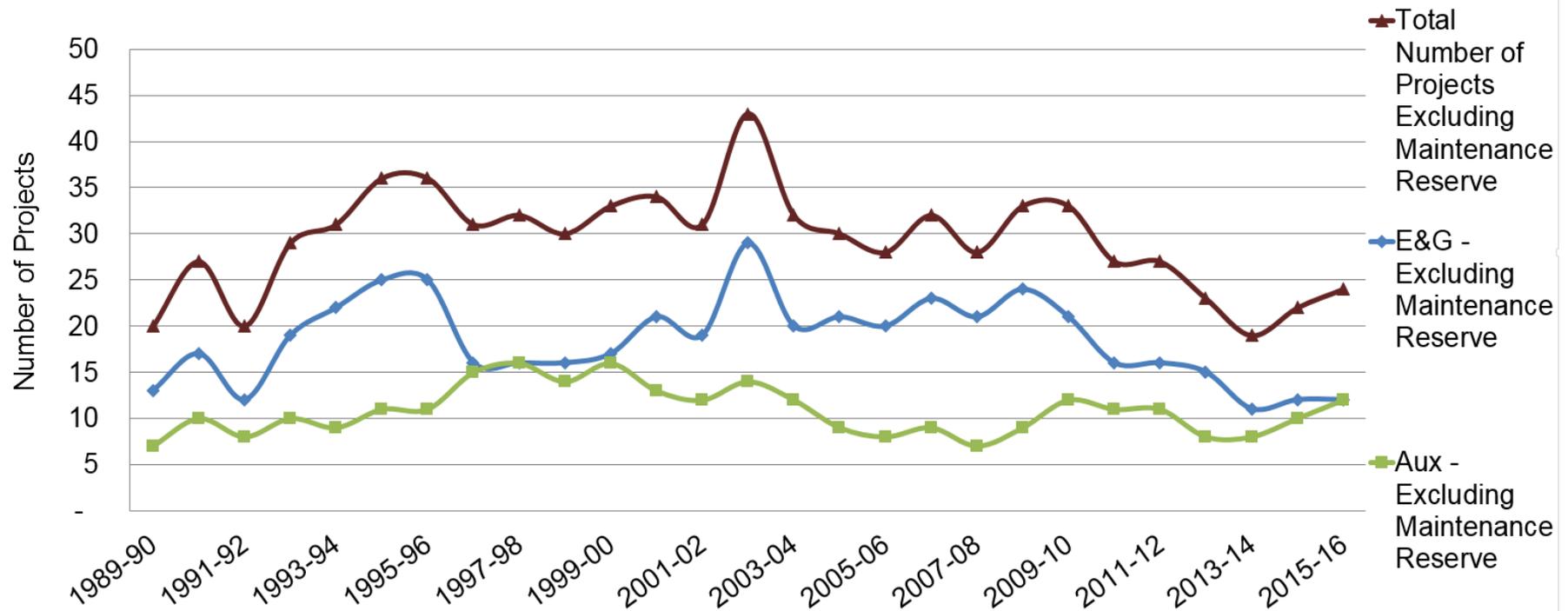
Capital Outlay

- **Major Construction Underway**
 - Classroom Building
 - Fire Alarm Systems and Access
 - Upper Quad Residential Facilities
 - Residential Door Access Improvements



Capital Outlay Trends: Projects

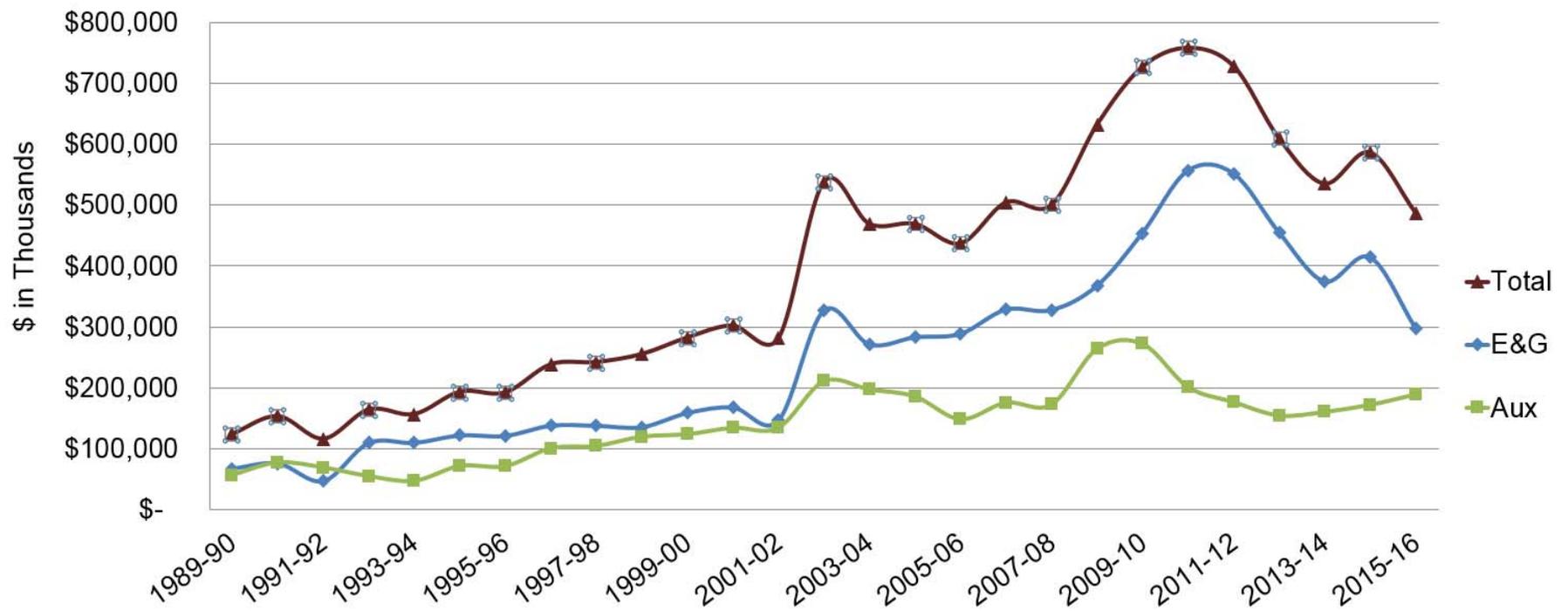
CAPITAL PROGRAM PROJECTS
Total Number of Active Capital Projects
Fiscal Year 1990 - Fiscal Year 2016





Capital Outlay Trends: Total Budget

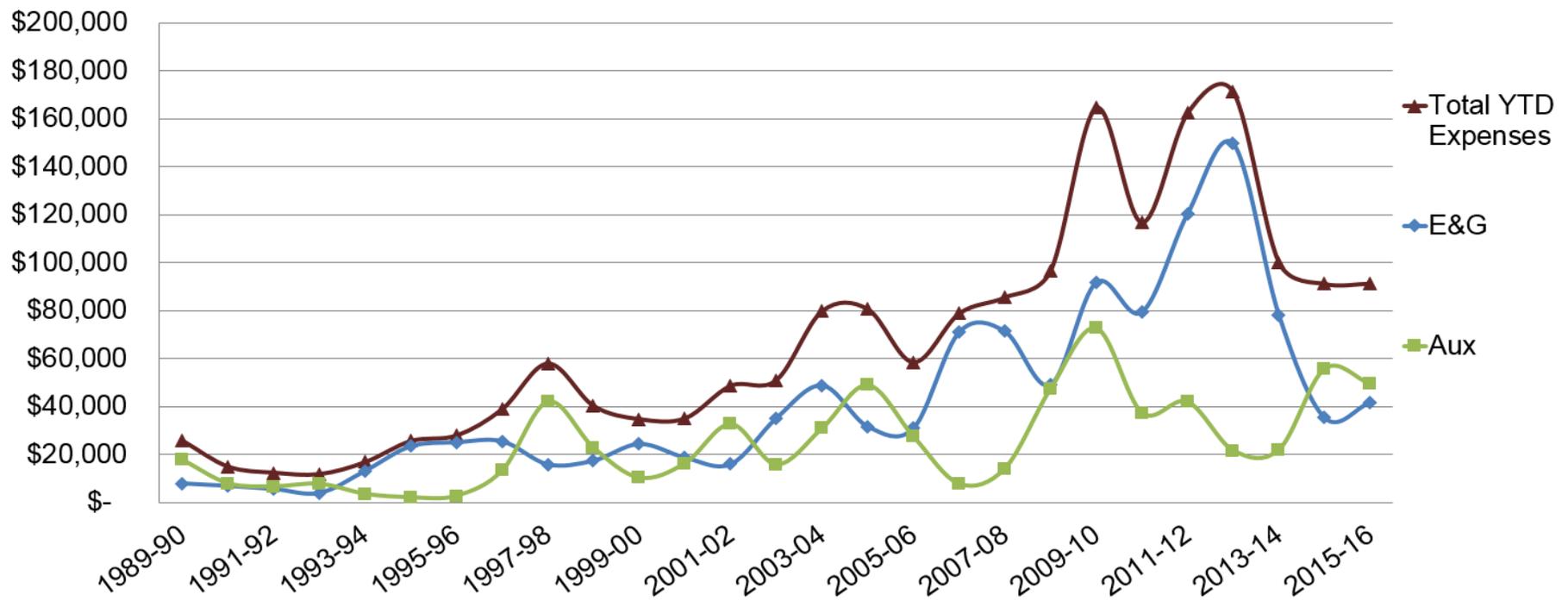
CAPITAL PROGRAM TOTAL BUDGET
Total Budget Level of Active Projects
Fiscal Year 1990 - Fiscal Year 2016





Capital Outlay Trends: Expenses

CAPITAL PROGRAM EXPENDITURE TREND
Total Annual Expenditures for Active Capital Projects
Fiscal Year 1990 - Fiscal Year 2016





Questions?